This Week in Metalworking

STEEL

Vol. 131 No. 6

Aug. 11, 1952

✓ NEWS ✓ PRODUCTION-ENGINEERING ✓ MARKETS

Metalworking Outlook	47
As the Editor Views the News Editor-in-Chief E. L. Shaner gives his thought-provoking views on matters of interest to the metalworking industry	51
Windows of Washington	62
Mirrors of Motordom The auto capital struggles to regain composure after the strike. Read what Detroit Editor H. C. Tuttle says about it	69
The Business Trend	73
Men of Industry	77
Production-Engineering News at a Glance	83
Thicker Boiler Plate Formed Faster New vertical press and horizontal draw bench turn out thicker boiler drums in a few minutes at less cost	84
Control System Eliminates Human Error Device powered by radioactive particle spotlights variations in weight of rubber coating applied to V-belts	87
Isotopes Aid Weld Inspection Energy of cobalt 60 is harnessed for non-destructive testing. Precise, safe, it costs less	88
Research Active in Temperature Standardization Industry's cry for more accuracy in temperature measuring devices is being answered by Standards Bureau research	90
Progress in Steelmaking Procedure for Sintering Filter Cake	93
New Products and Equipment	119
The Market Outlook Metal Prices and Composites start on Page 136	135
The Metal Market	147
Subcontract Summary 60 Helpful Literature	80 115 131 157

Editorial, Business Staffs—10. Advertising Index—163. Editorial Index available semiannually. STEEL also is indexed by Engineering Index Inc., 29 West 39th St., New York 18.

Published every Monday by the Penton Publishing Company, Penton Building, Cleveland 13, Ohio. Subscription in the United States and possessions, Canada, Mexico, Cuba, Central and South America, one year \$10; two years \$15; all other countries, one year \$20. Single copies (current issues) 50 cents. Metalworking Yearbook issue \$2.00. Entered as second class matter at the postoffice in Cleveland, under the Act of March 3, 1879. Copyright 1952 by Penton Publishing Co.

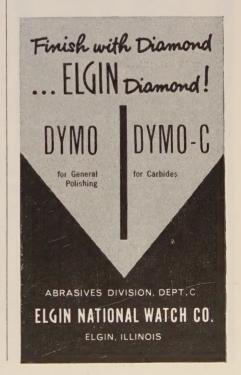


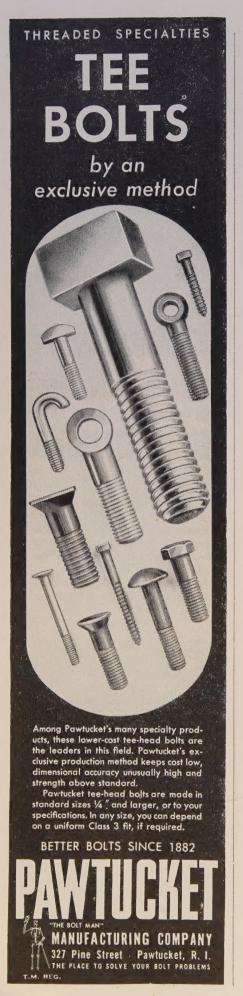
DRAWING DIE POLISHING Is <u>Cleaner</u> and <u>Faster</u> with

ELGIN DIAMOND

... AT HOSKINS
MANUFACTURING COMPANY

in Detroit, leading producers of high alloy resistance wire. Elgin's ready-to-use packaging and color identification of the various grades add still further savings in shop time. Elgin Diamond in DYMO will reduce your finishing and polishing costs, too, and give you uniform top quality results. That's why more and more of the country's leading wire mills...





Behind the Scenes...

Fun and Games

We were researching the other day in *Thomas' Register of American Manufacturers* in the section on toys. Running down the subheads of toy manufacturers which describe their main product, we squirmed a little as we read: Jiffy jig saws, fireworks, slingshots, bows and arrows, scissors, pistol games, sirens and hammers and tool sets. Then we came to this entry and shut the book with a shudder: "Meat choppers, iron and steel."

Cover Story

This week's cover story on open houses and their impact on industry was right down the alley for Assistant Editor Floyd Lawrence who wrote his master's thesis on propaganda analysis. He hastens to point out that propaganda can be good or bad—it's a matter of getting your ideas across effectively.

In developing his story, he contacted many companies who have plant tours. Some like Steel Improvement & Forge Co., Jones & Lamson Machine Tool Co. are really telling their story. Others just let people look around their plant, don't tell them much of anything. When Floyd ran onto that the next step was a natural. It was a summary of the things which make a really good open house.

Undesirable Work

Assistant Editor Bob Huber just got back from his Colorado vacation. While in the West he saw a rodeo. His comment is that he never in one afternoon saw so much undesirable work. Seems the contestants really take a beating.

He also got to go on a 15 mile horseback ride in the Rockies. Now he calls the saddle "the chafing dish."

On the Trail

We followed the trail of a story from its conception more than three weeks ago to its birth on the news pages a little to the east of here this week. It's the story on electric power expansion.

The first hint that STEEL would

carry such an article came at an editorial staff meeting when Assistant Editor Art Zimmerman pointed out that many certificates of necessity for fast tax write-offs were going to utilities. That kernel was tossed around, until Associate Editor Vance Bell recalled that on an earlier trip to Washington he had heard rumor; that all was not going well with the expansion program.

The story angle that developed was an analysis of the status of power expansion. The route the story oughl to take was decided upon and memory went to Ed Kreutzberg in Washingston, Ben Price in New York, Howard Tuttle in Detroit and Erle Ross in Chicago. Asking questions of utilities and power equipment manufacturers as suggested in the memo, each district man pursued the story in his area.

Each had the results of his researches in to the home Cleveland office about a week ago. Art Zimmerman, who had been already dding some interviewing on his own, then correlated the material to give you the national picture on power expansion.

Puzzle Corner

In the problem of July 28, the beam broke because the man put 152 pounds of strain on one rope and there was also 150 pounds of strain on the rope that was tied to the raining as he tried to get to the fine escape. That total of 300 pounds broke the beam. First in with that answer were George W. Frederick of Republic Steel Corp. and Robert W Hull of Canton, O.

Two pedestrians walk along the same road in the same direction. Walks at 4 miles per hour. He start out 8 miles in advance of B, who walks at 6 m.p.h. As they start, As dog leaves his master and sets of for B at 15 m.p.h. As soon as it reaches B he returns at once to and continues to run back and formuntil the second man overtakes the first. How far did the dog travel?

Shrollu



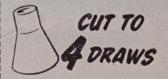
Deep-drawing with

FEWER DRAWS

A 10-DRAW CIVILIAN JOB

CUT TO

AN 8-DRAW DEFENSE JOB



Towle does BOTH on MULTIPRESS®

Multipress does it again—this time on deep drawing operations. In addition to smooth, oil-hydraulic pressure control that gets the most out of every job potential, it offers quick, easy convertibility that meets changing production needs in a hurry!

The deep-drawn tubes shown above, which are later formed into five sterling silver napkin rings, are produced on this 35-ton Multipress at the Towle Manufacturing Company of Newburyport, Mass. Starting with a flat, $7\frac{1}{4}$ " disc, the first draw produces a cuplike shape. The second draw deepens and narrows the cup, and the third produces a $1\frac{3}{4}$ " tube 7" long.

In only three draws, Multipress forms a tube that took ten draws by the old method!

Converted to defense work, the same Multipress forms special tubes used in rocket tail-fin assemblies. Instead of the eight draws formerly needed, Multipress does it in four! Dimensions of the tail-fin units must be held to very close tolerances, as they are used in high-precision assemblies. An aluminum disc 47/8" in diameter is drawn to round tubing 11/8" across the bottom, 31/8" deep, and flared to 23/8" across the top. Production rate is 7200 units per 8-hour day—with scrap losses held to a negligible factor.

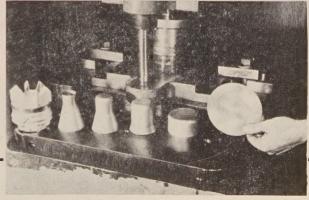
DENISON JAROILica

THE DENISON ENGINEERING COMPANY

Another Multipress at Towle paid for itself in three months by reducing several eight- and ten-draw jobs to only three or four draws—with better results and less scrap.

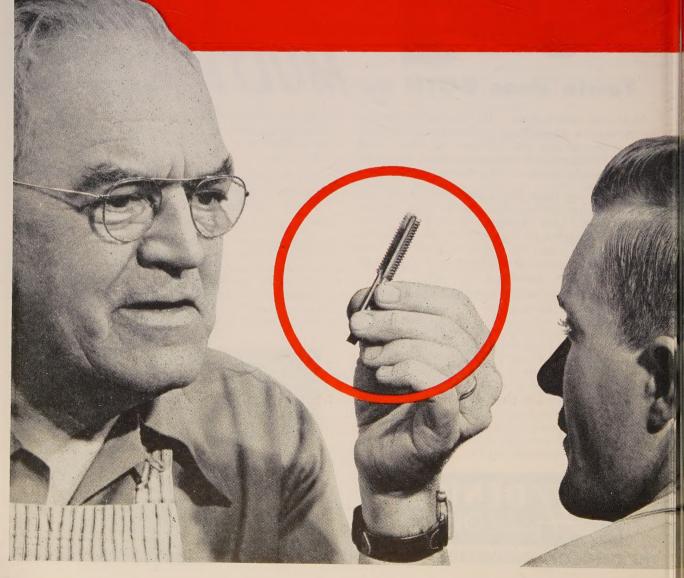
In still another case, when all five parts of a silver candlestick were preformed on Multipress, savings in a single year equalled the cost of the press.

The Multipress combination of widely adjustable action and smooth pressure control has proved to be the best answer to an amazing range of production jobs, including drawing, forming, flaring, stamping, crimping, staking, assembling, punching, slotting, blanking, broaching, trimming—and so on. Eight Multipress frame sizes offer capacities from one to 50 tons. Write for full details today!



1163 DUBLIN RD., COLUMBUS 16, OHIO

"MORSE TAPS are TOP! to begin with...and Electrolizing makes 'em las even longer!"





MORSE TWIST DRILL & MACHINE COMPANY, NEW BEDFORD, MASS.

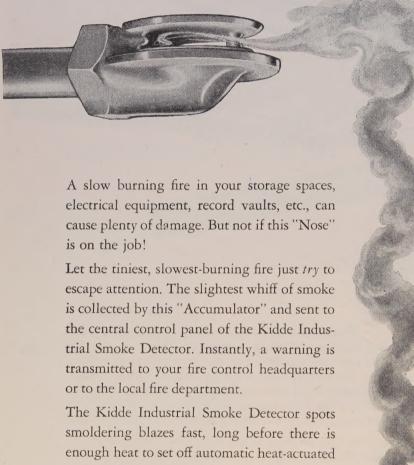
(Division of VAN NORMAN CO.)

Warehouses in New York, Chicago, Detroit, Houston, San Francisco

MORSE Cutting Tools

... buy them by phone from your Morse-Franchised Distributor and save ordering time

fire can't hide from this "Nose"



extinguishing or alarm devices.

Write today for full information on Kidde fire detectors, CO2 and foam systems, as well as portable extinguishers.



Walter Kidde & Company, Inc. 860 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

Editor-in-Chief E	. I	. S	HANE
Editor IRV	VIN	H.	SUCE
Managing Editor WALTER	J.	CAN	I PBEL
Market Editor			
Engineering EditorWA	LTI	ER]	COERG:
Steel Plant Editor			
Consulting Editor ALI			
Art EditorD	ON	S.	CADO:

Associate Editors:

FRANK R. BRIGGS, JAY DEEULIS VANCE BELL, JOHN S. MORGAN EDWARD C. BIRKNER

Assistant Editors:

WILLIAM R. WOLFE DOLORES K. MAILLE, M. T. BORGERHOF ARTHUR W. ZIMMERMAN, ROBERT E. HALL JOHN KELSEY, ROBERT O. JAYNES ROBERT F. HUBER, FLOYD G. LAWRENCE L. J. SKUDERIN

Resident Editors:

Washington	E. C. KREUTZBER
New York B. K.	PRICE, L. E. BROWN
	SAMUEL W. BAKE
Pittsburgh	EDWIN L. KARPICI
Detroit	H. C. TUTTIN
Chicago	E. F. Rose
London, European Ed	litor. VINCENT DELPOR

Editorial Correspondents:

Editorial Correspondents:

Birmingham, R. W. Kincey; Buffalo, L. G. Feldmann; St. Louis, Mac L. Hutchens Youngstown, George R. Reiss; Los Angelet Norman Lynn; San Francisco, Edwin Hazerty; Seattle, R. C. Hill; Dallas, C. I. Cates; Toronto, F. S. Tobin; Birmingham, Eng., J. A. Horton; Paris, France, Lee Jaudoin; Liege, Belgium, Jacques Foulor Dusseldorf, Germany, Herbert Gross.

BUSINESS STAFF

Business Manager..................................J. W. Zubr

Advertising:

Service Manager
Production ManagerA. V. ANDERS
New York E. W. KREUTZBERG, K. A. ZOLLNI
CALVIN FISHER
Pittsburgh S. H. JASPER, H. G. ROWLA
J. C. SULLIVAN, T. R. WARRI
Chicago L. C. PELOTT, W. L. POLA
J. W. VAUGH
ClevelandD. C. KIEFER, H. G. ROWLA
C. A. TALLINGER, E. L. FRANK
Los Angeles F. J. FULID
Griffin, GeorgiaFRED J. ALL

Market Research and Promotion: Promotion, Research Mgr. S.
Market Statistics GEO.
Mail & List Service BET S. F. MARI SEO. J. AUN ... BETTY HINT

Circulation Department:

Manager G. R. EBERS* Field Represent. H. R. DUNNE, C. A. PF

Main Office:

Penton Building, Cleveland 13, Ohio Main 1-8260

Branch Offices:

New York 17 . 60 East 42nd Murray Hill 2-2581 Chicago 11... 520 North Michigan A Whitehall 4-1234

Atlantic 1-3211 Pittsburgh 19

Trinity 5-3024 Detroit 2 ...

Washington 4. 1123 National Press BB Executive 6849

Los Angeles 48 6262 Commodore Sloat Webster 1-6865

Griffin, Georgia 331 South 12th Griffin 7854

London, 2 Caxton St., Westminster, S.V

Published by THE PENTON PUBLISHING COMPANY

President and Treasurer G. O. Hi Chairman . . E. L. SHAA Vice Pres., Director of Adv. R. C. JAED Vice Pres. and Secretary F. G. STEINEBS Asst. Secy. and Asst. Treas. J. P. LI

Also publisher of FOUNDRY • MACHINE DESIGN NEW EQUIPMENT DIGEST







Member, Controlled Circulation Audit National Association of Magazine Publicers, Society of Business Magazine Editand National Business Publications

N LAPOINTE BROACHING

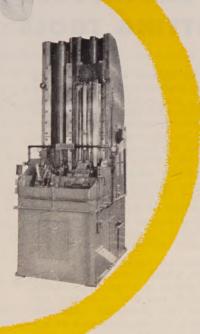
the skill

EARS IN BROACHING the oldest in the world

You don't need to advertise for more skilled operators to meet extraordinary production schedules... when you're equipped with Lapointe Broaching Machines and Broaches.

That is why, with the baffling shortages of skilled workers, many production men are taking time out in the midst of emergency programs to investigate Lapointe broaching, for insurance against future man-power shortages. Through broaching you are assured of repetitive accuracy, together with remarkable production speed.





LAPOINTE **Broaching Machines**

operate with push-button controls, and have safety devices that eliminate all possibility of incorrect operation or of harm to the operator. Then, too, with all of the accuracy actually engineered into the broach itself, the usual problem of rejects and re-work is eliminated.

Full information is available in our illustrated circular on Lapointe Double Ram Vertical Broaching Machines. Write for Bulletin DRV- 3.

THE LAPOINTE



11

THE WORLD'S OLDEST AND LARGEST MANUFACTURERS OF BROACHING MACHINES AND BROACHES



with Gorham-Engineered SPECIAL CUTTING TOOLS





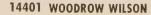


Next time you're up against a tough tooling problem, call in the man who can give you the right answers fast... your nearby Gorham Field Engineer! He's an expert in special cutting tools... and he's ready to provide a complete engineering service to determine your exact tooling requirements. He starts with your product, sketch or idea. He surveys your production operations and available equipment. He considers work material properties and desired finishes and tolerances. He plots proper machine feed, speed and method of tool driving. Then he develops practical design and engineering specifications for special cutting tools, metallurgically "tailor-made" for your application.

His recommendations are backed by Gorham's unmatched facilities, which include three fully-equipped modern plants, a large Engineering and Metallurgical staff, and a force of field application engineers in principal industrial centers, coast-to-coast. All are dedicated to furnishing prompt and profitable solutions to your special tooling problems. Gorham-engineered "specials" are turning problems into profits in thousands of plants every day . . . why not let them do the same for you? If you haven't met your nearby Gorham Field Engineer, write for his name, or send details of your problem direct for recommendations.

Gorham TOOL COMPANY

"EVERYTHING IN STANDARD AND SPECIAL CUTTING TOOLS."



DETROIT 3, MICHIGAN



LETTERS

TO THE EDITORS

Salaries Get Out of Line

In the Metalworking Outlook of the July 14 issue (p. 48), there's an article titled "Salaries: Are They in Line?"



Can you advise whether the report referred to therein is available to individuals and how much it costs?

Clarence E. Kendal Liberty Avenur Pittsburgr

• For complete information on that report contact Fisher, Rudge & Neblete 250 Park Avenue, New York, N. Y.

Great Galvanizing!

We're interested in the product callel "Galvanite" which is described in the article "Protects Iron and Steel" (Jule 21, p. 128). Will you please give us the name and address of the firm to comtact to obtain more information.

We intend to determine whether of not we can use this product in our op

erations here.

W. M. Dillel Presided Northwestern Steel & Wire Co Sterling, 2

Will you please advise us how to gin touch with the manufacturer of "Garvanite"?

J. W. Mecklenburge Chief Engines Brasco Mfg. C: Harvey, 11

... we would like to contact them for more information and samples

Homer C. Pr. Sisher Body Divisib General Motors Co. 4 Detro

. . . we'd like any additional information available on "Galvanite."

R. Kaufma Rawling Bros. I Los Anges

• Write to H. L. Grebinar, Galvand Corp., 40 W. 29th St., New York 1, N.

'Mirrors' Touches on Corrosi

The National Association of Corresion Engineers would like permission reproduce p. 75 of your July 7 issue ("Mirrors of Motordom"). We conside the item at the bottom of the first coumn to be especially significant ("Fe automotive applications, the No. 1 problem is developing better corrosion resistance.").

A. B. Campi National Association of Corrosion Engine Houston, 7

• Permission granted.

The Metalworking Outlook

August 11, 1952

Iron Ore: Prospects Better

The iron ore situation looks brighter. Steel mills should be able to get through next winter without stoppages caused by a shortage of that raw material. Some 25 million tons of ore were in inventory on June 2. About 6 million of that was used in June and July. That 19-million ton inventory now in existence—smaller than usual but still substantial—will help solve ore problems, as will rail movements and contemplated Coast Guard action to break ice this fall and extend the season as long as possible.

More Police Work for NPA

Watch for a new drive by NPA to get compliance on its steel inventory rules. The agency will aim at both the military and industrial users to get them to keep their stocks at a minimum until the steel shortage is over. Special attention will be given to the 500 top users of steel. Sometime this fall will come a spot check on inventories across the nation.

Change in Tune

Government mobilization officials are beginning to change their tune a little regarding the severity of the steel strike on defense production. The music is still somber, but relieved with slightly more optimism. Acting Defense Mobilizer John R. Steelman says all major defense programs are behind schedule, but not necessarily below prestrike production levels. Numerous speed-ups in defense production that had been planned for this summer must now be postponed. But some programs, such as machine tools, are doing well. Mr. Steelman says 299 plants working on military contracts were closed or slowed down by July 25. He expects more slowdowns in coming months. Nonmilitary programs will regain prestrike production levels by the end of the fourth quarter, he believes.

Additional Plate Capacity?

Washington planners have cooking a scheme to expand heavy plate capacity. They claim the strike was especially disastrous to rearmament programs that need that product. They will offer the steel industry 100 per cent fast amortization on the cost of the expansion.

Hitch in Aluminum Expansion

The third round in aluminum expansion may not be approved until late this year. Military requirements are uncertain, and new producers are reluctant to enter the field because of high construction and power costs. Military needs hinge on how much of the light metal the Army and Navy would take in any weapons redesign in an allout war. The Air Force take in World War II amounted to

about 90 per cent of all the aluminum used by the military in that conflict. Now that share is down to about 50 per cent.

Hassle on Auto Output

Soon to be decided will be the U.S. auto and truck production to be permitted for the first quarter of next year. The industry would like to produce 1,250,000 cars and 300,000 trucks. Auto output in the first half averaged slightly over 1 million per quarter. Truck assemblies averaged 318,000. The industry won't have trouble getting copper to support those levels and will have little trouble finding the aluminum. Steel will be the bottleneck. If those higher figures prevail, Ford will be one of the major beneficiaries since its ratio of production compared with the rest of the industry is rising.

Coming in September

A detailed policy with respect to contract termination on Air Force machine tool contracts will be available early in September. The Air Force is involved in most of the cancellations thus far, but says most of that action is now completed.

Place in the Sun

The Munitions Board is due for a more important place in the sun. Munitions Board Chairman John D. Small gets the job of "principal advisor and assistant to the defense secretary." He can now make decisions on his own and over-rule the three undersecretaries of the services who constitute the board. Formerly the board chairman was cast in the role of co-ordinator and compromiser. Significance: Mr. Small becomes production czar for the military. The action should speed armament decisions coming out of the Pentagon.

Straws in the Wind

Supplies of tinplate are improving and there will be only spot shortages of cans for the 1952 food crop . . . SR 4 to CPR 30 has been amended to permit manufacturers of machinery and related goods to figure increases on the basis of individual accounting practices . . . Coal stocks now above ground are sufficient for about 85 days' consumption, the highest stocks since January, 1943 . . . The CIO United Electrical Workers seeks a 21-cent an hour increase from General Electric Co. . . . The 105-day strike at Robertshaw-Fulton Controls Co. is ended.

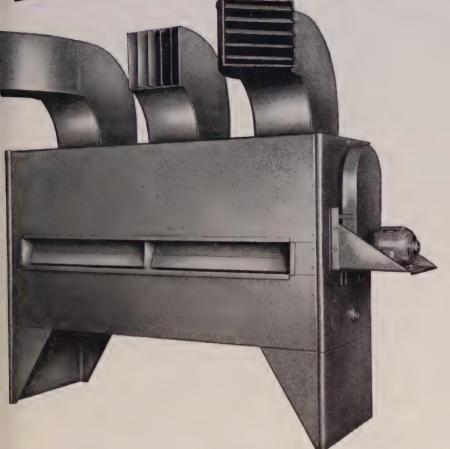
What Industry Is Doing

Pattern of post-strike steel distribution emerges (p. 55) . . . Price increases are recommended to OPS by the General Steel Products Advisory Committee (p. 56) . . . Earnings of Bethlehem Steel Corp. and Inland Steel Corp. reveal effects of the steel strike (p. 57) . . . Industrial expansion projects labelled "critically important" will get the steel they need during the fourth quarter (p. 58) . . . Expansion goals set for 16 fields of industry and six metals and minerals (p. 58) . . . Electric power expansion schedules toppled like a house of cards during the steel strike (p. 57) . . . Idle and excess inventories stalk aircraft contractors (p. 59) . . . Metal spinning plants are humming as demand increases (p. 59) . . . Plant tours increase as alert companies build better public and employee relations (p. 66).



IMPROVED INDUSTRIAL HEATER

for heating large plant areas



Two new Industrial Heaters with wide applications:

GENERAL PURPOSE HEATER

for manufacturing areas, warehouses, garages, commercial buildings — with standard heating coils.

HEAVY DUTY HEATER

for continuous-duty high-pressure systems, or industrial process work—with wrought iron heating coils.

XCLUSIVE STURTEVANT FEATURES

IEAVY DUTY HEATERS—For rugged service, wrought on 1" pipe is used instead of copper tubing. Tapered steel ns are metallically bonded to the pipe. Solder bath provides ermanent bonding and corrosion-resisting external coating. nternal steam distributing pipes are also wrought iron, proext against freezing. The entire coil assembly is as rugged as the connecting steam lines.

MOOTH EXTERIORS—Die-formed casings with rounded orners eliminate accident-causing sharp edges and dirtatching pockets. Removable panels aid inspection.

ONE WARRANTY—Only Westinghouse makes all principal components—fans, heating coils and motors. You get unit engineering and single equipment responsibility.

Other features are:

WIDE RANGE OF SIZES—Heat output up to 2,500,000 btu/hr; air volumes up to 25,000 cfm; steam pressures up to 200 psig. ACCESSORIES—Filter boxes optional for mechanical air cleaning. Mixing boxes optional for proportioning outside and re-circulated air.

For more information, contact your nearest Westinghouse Sturtevant office. Or write for Catalog 1510, soon off the press. Address Westinghouse Electric Corp., Sturtevant Division, Hyde Park, Boston 36, Mass.

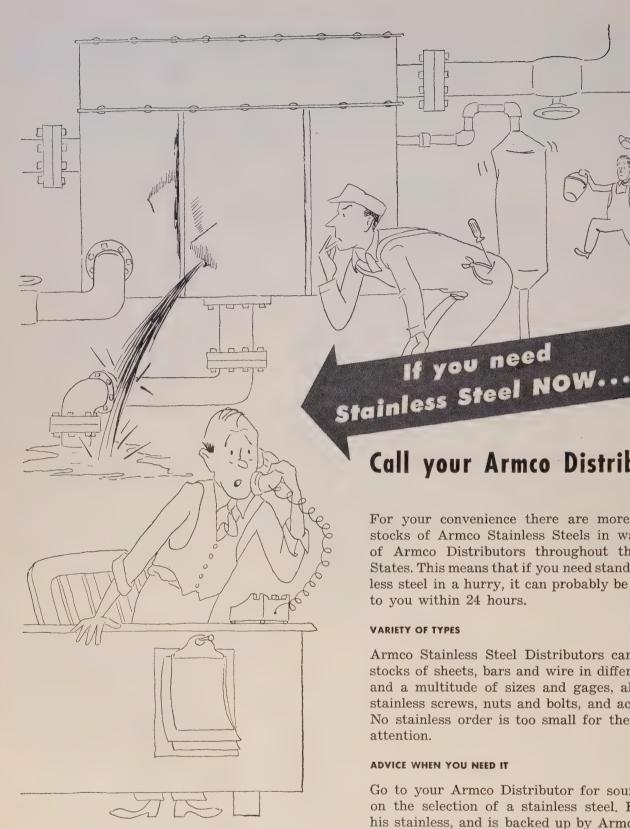
YOU CAN BE SURE ... IF IT'S Westinghouse

TUNE IN ON HISTORY! Only Westinghouse brings you complete coverage of political campaign over CBS television and radio.

AIR HANDLING

J-80277

August 11 1059



ARMCO STEEL CORPORATION



3922 Curtis Street, Middletown, Ohio . Distributors from Coast to Coast • Export: The Armco International Corporation

For your convenience there are more than stocks of Armco Stainless Steels in warehous of Armco Distributors throughout the Unit States. This means that if you need standard state less steel in a hurry, it can probably be deliver to you within 24 hours.

Call your Armco Distributor

If you need

VARIETY OF TYPES

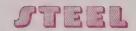
Armco Stainless Steel Distributors carry amd stocks of sheets, bars and wire in different ty and a multitude of sizes and gages, along wa stainless screws, nuts and bolts, and accessor No stainless order is too small for their care attention.

ADVICE WHEN YOU NEED IT

Go to your Armco Distributor for sound adv on the selection of a stainless steel. He kno his stainless, and is backed up by Armco's ma years of experience. Besides, he can supply with Armco booklets on all phases of stainl fabrication. Just name your problem!

ASK FOR NEW WALL CHART

Be sure to ask for the new 25 by 39-inch w chart, "Cutting and Forming Armco Stain's Steels." It is a pictorial story in 12 photograof the best ways to handle, cut and form stain steel sheets and strip.



August 11, 1952



Two-Way Squeeze

Two bits of news of unrelated happenings that occurred in the transportation field last week should give pause to executives in the metalworking industry.

One had to do with the threatened strike by four railroad brotherhoods against the lines of the New York Central Railroad east of Buffalo. Among the demands put forth by the brotherhoods are a full extra day's pay for firemen who are required to throw a switch occasionally, an extra day's pay for yard engine crews if they change from one engine to another because of engine failure or other reason, an extra day's pay for a yard crew when its engine is required to push a freight train out of the yard and the employment of three trainmen instead of two on one-car trains when the motive power is installed in the car.

The second item had to do with the sorry plight of the Philadelphia Transportation Co. In June the company was granted a temporary fare increase but it never became effective because the city of Philadelphia blocked it by court action. The company's application to the state public utility commission for a permanent fare increase still is pending. Thwarted in its efforts to increase revenue, the company announced it is cutting salaries of officers and department heads 10 per cent, those of supervisory personnel 5 per cent and is furloughing 300 maintenance employees.

These two incidents illustrate the all too prevalent tendency for unions to demand more compensation via working conditions which defeat management's efforts to operate efficiently and for governments to shut the door on more revenue by design, neglect or incompetence.

Some industrialists are unduly complacent about this tendency. They contend that featherbedding is a form of torture especially designed for the railroads and that the rate problem is a headache reserved for public utilities.

Let's not fool ourselves. The counterpart of featherbedding is rampant in the metalworking industry today. Through price control, manufacturers are as much subject to price limitations as are the public utilities. We must put an end to this two-way squeeze before it destroys our economy.

E. C. Shaner

EDITOR-IN-CHIEF

"cover story" in this issue (p. 66), the editors chose the fascinating topic of the industrial "open house" or plant tour. Almost every com-

pany that has staged one of these affairs is convinced that it has great potentials. Editors are invited to scores of them and their opinion, based upon rather extensive experience, is that a well managed open house pays off handsomely.

A sophisticated guest can tell within minutes of his arrival whether or not the event will be successful. If he sees the townspeople greeted cordially, assigned to guides promptly and escorted in orderly fashion along a carefully planned route of inspection, he knows instinctively that the open house will click. On the other hand, if he encounters flustered officials—appalled at the unexpected size of the turnout—long delay in assignment to guides, undue congestion of several groups at one station of inspection and other evidences of confusion, he knows that the affair will be something less than a success.

In short, there is no known substitute for painstaking, intelligent planning.

A WAY TO SAVE MONEY: An Ohio stamping company operates two parallel lines of inclined presses. Each line turns out automotive rocker arms and rocker shaft brackets at the rate of 1150 pieces per hour. On each press (p. 87), finished parts ejected by air or mechanical means slide down a chute to a portable conveyor that conveys them upward toward the next press. Parts then fall into another chute that delivers them to the hands of the next operator.

This simple arrangement increased production 10 per cent; it saves floor space and keeps parts off the floor. These advantages seem obvious, yet it is amazing how many manufacturers still waste money by using antiquated methods to move parts from machine to machine.

OUR DOLLAR UNDER PAR: One day last week the Canadian dollar was quoted at \$1.04219 in terms of United States currency. This is the highest exchange ratio in 18 years. It reflects creditably upon the realism of the Canadian government. Only Canada, Switzerland and one or two other nations have discounted the American dollar since the end of World War II.

The reason for discounting our currency is clear as crystal. Very few public servants in Washington are really serious about economy. The others, including President Truman, don't give a tinker's dam about saving money. Our 3.7 million employees on the federal payroll at

the end of the war were paid \$8 billion plus. Today in peacetime our 2.6 million civilian federal employees receive approximately \$10 billion.

Our dollar will be discounted by more and more nations unless we begin to be realistic about fiscal policy.

THEY TAKE NO CHANCES: One of the most serious effects of the prolonged steel strike is the serious threat of a deficiency in stocks of iron ore at blast furnaces and lower lake ports. Most steelmakers were quick to see this danger and they responded promptly by arranging for the transport of an estimated 4 million tons of ore by the all-rail route between now and the close of the lake navigation season. Beyond this precaution, they expect to continue heavy rail shipments throughout the winter months.

To persons who are not familiar with the economy of our lake fleet mode of ore transportation, this project may seem unimportant. In reality it is tremendously significant. Ore customers are willing to incur double or more the normal cost of ore transportation in order to play safe on 1953 production commitments.

O. K. FOR METALWORKING: Close study of the report on "Share Ownership in the United States" issued by the Brookings Institution about six weeks ago reveals basic information from which interesting comparisons can be made. For instance, on page 130 is a table showing the number of shareholders of record of 45 common stocks listed on the New York stock exchange in 1930 and 1950. The 45 stocks are issued by railroads, public utilities, manufacturers and others. These 45 companies had 2,638,032 shareholders in 1930 and 4,533,644 in 1950—an increase in 20 years of 71.9 per cent.

Included in the 45 companies are 12 that belong in the metalworking industry. We wondered how their record of number of shareholders compared with that of the total of the 45 companies. Computation shows that the 12 metalworking companies had 785,648 shareholders in 1930 and 1,404,619 in 1950—an increase of 78.8 per cent. It is gratifying to note that the gain for the metalworking establishments is somewhat better than that for all companies in the tabulation.

REDUCED HANDLING MEANS FASTER PRODUCTION AND LOWER COSTS AT Firestone

In setting up a Metal Stampings contract, Firestone thoroughly analyzes the manufacturing procedure to reduce every controllable cost factor to its minimum. This includes, of course, the coordination and integration of large multi-operation presses and their faster production methods with heat treating, welding, bonderizing, assembly and finishing.

For complete cost analysis on Stainless Steel, Carbon Steel and Aluminum Stampings and Sub-Assemblies, wire or phone Firestone Steel Products, Metal Stampings Division, Akron 1, Ohio.

Copyright, 1952, Firestone Steel Products Co.



HUGE, HEAVY TONNAGE, LARGE-BED-AREA PRESSES SPEED DRAWING AND FORMING

These operations are integrated with Welding, Heat Treating, Bonderizing, Painting and Assembly in Fast, Straight-Line Production.





Multi-Operation Presses are set up to save time by providing continuous flow of material under constant inspection.





We've Standardized Cone-Drive Gears for You!

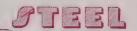
Here are the reasons why...

- 1. Lower Cost As little as 1/3rd the cost of special gear sets and speed reducers.
- 2. Faster Delivery Your order may be shipped from stock in as little as 24 hours! Practically any size and ratio shipped within one week.
- 3. Interchangeability . . . Cone-Drive gear sets of different ratios are now interchangeable in the same housing as long as center distances are the same.
- 4. Ready Replacement . . Use of standardized parts throughout means simple, quick and low cost replacement when required.

Why all this is possible... In Cone-Drive double enveloping gears there are no circular of diametral pitch limitations to consider. This vital design feature has now permitted STANDARDIZATION of right angle reduction gearing, made possible mass-production of gear and worm blanks and simplified and speeded manufacture and assembly.

What to do Write, phone or wire today for Catalog No. 700—or better yet ask for specifications of the STANDARD Cone-Drive gear seemost nearly meeting your power and ratio requirements. They are available in ratings from fractional to hundreds of horses power and in ratios from 5/1 to 70/1.

Livision, Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan



DISTRIBUTION PATTERN SHAPES UP



First defense steel to be shipped from Bethlehem Pacific's fabricating works since the end of the 55-day steel strike is loaded for shipment. Destination: Douglas Aircraft Co., Santa Monica, where 141 tons of structural steel will be used for expanding an existing aircraft building

Who Will Get What Steel When?

Details of steel distribution must still be worked out, but the pattern emerges. The military will get only 1 million tons monthly, just a shade more than before the strike

THE PATTERN for post-strike distribution and prices of steel emerges, but some of the details must still be filled in.

Distribution details will be clearer when precise military requirements are known. Price details remained in the dark late last week (see p. 56) because OPS had not officially approved the price rises recommended by the industry.

Keystone—The crux of the distribution problem is the tonnage required for military, atomic energy and machine tool programs. As it looks now, the most urgent of

strike-caused carryovers in steel orders for those preferred programs will be erased by Nov. 30. That will be accomplished by boosting the military steel take to about 1 million tons per month in September, October, November and December. That's only slightly more then the average take before the strike, between 850,000 and 1 million tons monthly.

The tonnage going for preferred programs in the third and fourth quarters will be lower than expected. A partial explanation of that reduction could be political; administration men have an eye toward the November presidential elections, although no Washington official will admit it. Part of the reduction probably is caused by the lower fiscal 1953 military appropriations, the influence of which is only now being felt. Whatever the reasons, total military receipts of steel won't be up to schedule until late in the first quarter of 1953

Score Card—Total loss of steel production from strikes in April, May, June and July is equivalent to about 10 weeks' normal output. The military carryover from April, May and June should be shipped in August and September. The military and some other carryover from July should be shipped in September and October. The military and other carryover from August and September should be shipped in October, November and December. Advance allotments for the fourth quarter should be ship-

ped in December, January and February.

Few civilian consumers will have a comfortable balance in their inventories before November.

Reshuffled - NPA says CMP tickets for steel will all be honored eventually, although many will have to be cashed months late. To achieve all the juggling of distribution is a stream of orders coming out of Washington. More will be on the way. Under those regulations, the third quarter orders have preference, with all military orders to be filled in so far as possible by Nov. 30, even though it means delaying civilian orders scheduled for delivery at an earlier date. Civilian orders for third quarter and earlier delivery carry a priority over all fourth quarter orders including set-asides given the mills to protect fourth quarter books of steel by military, atomic energy and machine tool

buyers. (For a list of the setasides, see p. 61). The fourthquarter set-asides do not include the steel going to warehouses which will get a minimum of 100 per cent and a maximum of 120 per cent of their base period requirements.

Steelmaking operations last week

climbed to 85 per cent of capacity a rise of 42 percentage points in seven days. In that period, severa of the companies still struck, in cluding Lukens Steel Co. and Wheeling Steel Corp., signed with the union. The few other firm which still hadn't settled were expected to do so shortly.

How Steel Prices May Be Increased

LATE LAST week OPS had not yet finally approved the new steel prices.

They had been worked out by the industry advisory committee, recommended for approval by people in the Iron & Steel Section of OPS, but not officially O.K.'d by top OPS men. As far as ever away is Washington sanction of the host of price increases necessary for people who use steel (STEEL, Aug. 4, p. 61). Nor has the "pass through" been authorized on alu-

minum or manganese. Raw all minum went up 1 cent a pound las week; alloys, 5 per cent. Manganese rose \$40 a ton, which will him the cost of making steel about 4 cents a ton.

The accompanying price list can ries the increases recommended to OPS by General Steel Products Industry Advisory Committee. The final boosts may deviate slighted from these. All rises are in dollar per net ton except where they are indicated otherwise.

Price increases recommended July 30, 1952, by General Steel Products Advisory Committee for Office of Price Stabilization approval

CARBON PRODUC	TS
Ingots	\$2.00
Blooms, Billets & Slabs—For Blooms, Billets & Slabs—Rere Blooms & Billets—Shell	ging 4.50
Blooms, Billets & SlabsRero	olling 3.00
Blooms & Billets-Shell	4.50
Seamless Pipe & Tube Bloom	s & Bil.
lets	
Skelp	
Tube Rounds	
Wire Rods	4.50
Structural Shapes inc. Bearin	g Piles. 4.00
Sheet Piling	4.50
Plates—Sheared & UM Plates—Floor	4.00
Plates—Floor	4.00
Rails—60 # & under per linear Rails—over 60 # per linear Track Spikes	ar yard. 5.00
Rails-over 60 # per linear	yard 3.50
Track Spikes	10.00
Joint Bars	4.50
Tie Plates	5.50
HR Bars & Special Bar Section	ons 5.00
Concrete Reinf Bare_unfah	5.00
Cold Finished Bars	7.50
Tin Plate-Electric (per	base box) 25c
Tin Plate—Electric(per Tin Plate—Hot Dip(per	base box) 25c
Black Plate(per	hase how) 25c
Terne Plate(per	hase box) 25c
Hot Rolled Sheets	3.50
not Rolled Sheets	4 50
Cold Rolled Sheets	
Enameling Sheets	5.50
Galvanized Sheets-inc.	
Formed Roofing Siding &	Valley,
Galvanized Sheets—inc. Formed Roofing, Siding & Ridge & Flashing	5.50
Sheets—Long Terne	5.50
Sheets-All Other Coated	5.50
Electrical Sheets—Pole Electrical Sheets—Field	3.50
Electrical Sheets-Field	12.00
Hot Rolled Strip	4.50
Hoops, Baling Bands & Cott	on Ties. 8.00
Standard & Line Pipe	
	(21/ mtg.) 6 50
Buttweld—Black P.E Black T&C	(3½ pts.) 5.50
Black T&C	(3½ pts.) 7.00
Buttweld—Galv. P.E Galv. T&C	(3½ pts.) 7.00
Galv. T&C	(3% pts.) 7.50
Seamless Lapweld & Electi	cic Weld
Black	
2"-4" Nom, P.E,(5¼ pts.) 10.50
2"-4" Nom, T&C(5½ pts.) 11.00
5" Nom & over P.E	.(3 pts.) 6.00
2"-4" Nom. P.E (2"-4" Nom. T&C (5" Nom. & over P.E 5" Nom. & over T&C (3½ pts.) 6.50
Seamless Lapweld and El	ectric
Weld Galvanized	cciic
2". 4" Nom DE	51/ mtg) 11 00
2 -4" NOIII, P.E.,(5 % pts.) 11.00
Oll All Mon TIRG	0 % pts.) 11.50
2"-4" Nom. T&C(3 % DIS.) 6.50
2"-4" Nom. T&C(5" Nom. & over P.E(0.11
2"-4" Nom. T&C(5" Nom. & over P.E(5" Nom. & over T&C(3½ pts.) 7.00
2"-4" Nom. P.E (2"-4" Nom. T&C (5" Nom. & over P.E (5" Nom. & over T&C (Oil Country Goods—Seamlers,	3½ pts.) 7.00 Electric
Oil Country Goods—Seamlers,	3½ pts.) 7.00 Electric
Oil Country Goods—Seamlers, Weld & Lapweld	Electric
Oil Country Goods—Seamlers, Weld & Lapweld Casing F-25	Electric 6.50
Oil Country Goods—Seamlers, Weld & Lapweld Casing F-25 Casing H-40	Electric 6.50 6.50
Oil Country Goods—Seamlers, Weld & Lapweld Casing F-25	Electric 6.50 6.50 6.50

Casing Deepwell	\$9.00
Tubing H-40	11.00
Tubing F-25	11.00
Tubing J-55	11.00
Drill Pipe—Grade D	11.00
Drive Pipe	6.50
Tubing J-55 Drill Pipe—Grade D Drive Pipe Misc. Tubular—Couplings	33.00
Seamless & Welded Mechanical &	
Pressure Tubing (on base price)	5.5%
Drawn Wire	
Acme Spring	7.50
Basic & Bestemer	7.50
Box Binding	7.50
Buckle	7.50
Con Key	7.50
Chain	7.50
Check Rower	7.50
Clothes Pin Coat Hanger Scrapless Nut	7.50
Coat Hanger	7.50
Scrapless Nut	7.50
	7.50
	7.50
Tubular Rivet	7.50
Tuning Pin	7.50
Split Rivet Tubular Rivet Tuning Pin Wood Screw Welding Strand Wire Tying Wire Wool Wire Pear Shape Square	7.50
Welding	7.50
Strand Wire	7.50
Tying Wire	7.50
Wool Wire	7.50
Pear Shape	7.50
Square	7.50
Nail Wire	7.50
Nail Wire Pump Stapling (Bright All Other) Bale Tie Cross Head Wire Bale Tie Wire	7.50
Stapling (Bright All Other)	7.50
Bale Tie Cross Head Wire	7.50
Bale Tie Wire	7.50
Baling Wire	7.50
Merchant Quality Galvd Annld	7.50
Premier Spring	7.50
All Other Wire	*****
Merchant Quality, Galvd., Annld Premier Spring All Other Wire	4.7%
Nails-Cut & Wire	9.00
Staples	8.00
Wire Tacks	22.00
Woven Fence	9.00
Welded Fence	14.00
Wire Netting	14.00
Fence Posts, Commonly Produced by	
Staples Wire Tacks Woven Fence Welded Fence Wire Netting Fence Posts, Commonly Produced by Steel Mills Wire Bale Ties—Coil and Loop Barbed & Twisted Wire Wire Beigrogrips, Mesh—Welded	8.00
Wire Bale Ties-Coil and Loon	9.00
Barbed & Twisted Wire	8.00
Barded & Twisted wire Wire Reinforcing Mesh—Welded Precast All Other Wire Reinforcing Mesh	0.00
Precast.	14.00
All Other Wire Reinforcing Mesh	7.50
Chain Link Fabric Ornamental Fence & Trellis, Commonly Produced by Steel Mills Tubular Fence Posts & Fence Rails.	10.00
Ornamental Fence & Trellis Com-	20.00
monly Produced by Steel Mills	8.00
Tubular Fence Posts & Fence Rails	0.00
Commonly Made by Steel Mills	7.00
Wire Rone & Cord	31.00
Guard Rail Strand	15.00
Commonly Made by Steel Mills Wire Rope & Cord	16.00
butano (otner than duard stall)	10.00

• •	
Wire Hoops	ec 00
Clothes Line	10.00
Steel Hardware Cloth	10.00
	4.7%
Steel Screen Cloth	
(of base price, extras) Cold Rolled Strip	4.7%
	9.00
Low Carbon High Carbon	17.00
Specialties (Details Later)	
(of base price, extras)	4.7%
HIGH STRENGTH—LOW ALLOY	7
Ingot, Blooms, Billets and Slabs	4.50 7.50
Hot Rolled Bars	6.00
Plates	6.00
Hot Rolled Strip	7.00
Hot Polled Shorts	5.50
Hot Rolled Sheets Cold Rolled Sheets	7.50
Galvanized Sheets	8.50
Cold Rolled Strip	15.00
Cold Rolled Strip	10.00
ALLOY AND STAINLESS STEED	L.
PRODUCTS	
Alloy	
Ingots	3.00
Blooms, Billets & Slabs	6.00
Wire Rods	6.00
Structural Shapes	7.50
Plates	10.00
Hot Rolled Bars	7.50
Cold Finished Bars	12.00
Gold Dolled Sheets	12.00
Cold Rolled Sheets	12.00
Electrical Sheets—All Alloy Grades Hot Rolled Strip	12.00
Cold Polled Strip (to be detailed leter)	12.00
Cold Rolled Strip (to be detailed later)	37.50
Wire	$12.00 \\ 14.00$
Tubing—N-80 Drill PipeGrade E	12.37
Casing—N-80 (Alloy)	9.00
	3.00
Schedule I—Hot (of base price)	5.0%
Schedule I—Cold (of base price)	5.0%
Schedule J—Rearing—Hot	0.0 70
Schedule J—Hot (of base price) Schedule J—Cold (of base price) Schedule J—Bearing—Hot (of base price) Schedule J—Bearing—Cold (of base price) Schedule V—Aivereft—Cold	6.0%
Schedule J-Bearing-Cold	
(of base price)	6.0%
Benedule IIAntiant-Cold	0 0 0
Pressure Tubing (of base price)	3.0%
Schodule R-2 Hot (of becaution)	4.7%
Schedule B-2 Hot (of base price) Schedule B-2 Cold . (of base price)	
Schodule P 2 Hot (of here price)	4.7%
Schedule B-3 Hot (of base price) Schedule B-3 Cold . (of base price)	5.0%
All Other Alloy including Carbon &	0.0%
All Other Alloy Including Carbon &	
Alloy Tools Steels but excluding High Strength-Low Alloy	

..... (of base price, extras) 4.7% Stainless Steel .(of base price, extras) 4.7%

Class B Allotments Relaxed

Producers of class B products will be allowed to calculate their own controlled materials allotments for first quarter, 1953.

Under present self-certification rules, class B product makers need not file CMP 4B forms in all cases where their third quarter allotments were less than the following: Carbon steel, 500 tons; alloy steel, 30 tons; nickel bearing stainless, 10,000 lbs.; copper and copper base alloy, 40,000 lbs. and aluminum, 30,000 lbs.

Controlled materials may be obtained under this procedure regardless of the amount of third quarter aloltments to these limits: Carbon steel, 25 tons; alloy steel, ton; nickel-bearing stainless steel, 500 lbs.; copper and copper base alloys, 10,000 lbs. and aluminum, 20,000 lbs.

A self-certification procedure is in the works for class B producers without 3rd quarter alloted mateirials.

Steel Profits Skid

Bethlehem, Inland show what the strike did to their finances in the second quarter

BETHLEHEM Steel Corp. and Inland Steel Co. revealed the effects of the steel strike on their second quarter earnings.

Inland's earnings were almost halved and Bethlehem's income was cut more than 75 per cent in the second quarter this year as against the same 1951 quarter.

Profit Pared — Net income for Inland for the three months to June 30, which included 32 days of strike, was \$4.4 million. This compared with \$8.1 million in the second quarter of 1951. Bethlethem's net earnings in the second quarter was \$5.3 million compared with \$23.6 million last year.

In tax deductions based on income for this year's second quarter, Bethlehem set aside \$5.3 million as compared with \$38.7 million in the same quarter a year ago. Inland set aside \$4.4 million in taxes in the second quarter. This compared with \$16.6 million in the same period last year.



401,000 POUNDS OF GE STATOR DESTINED FOR CONSOLIDATED EDISON
. . . a detour, too, for the electric power expansion program

Fast Shuffle in Power Expansion

New electric power capacity lost this year due to the steel strike probably won't be made up before 1954. Expansion schedules fall flat

ELECTRIC POWER expansion schedules toppled like a house made of cards during the steel strike. It's too early yet to pick up the pieces; that depends on the decisions reached by the government in allocating materials to equipment makers and the construction industry.

This much is certain: Completion on schedule of the original 32 million kw of capacity slated for 1952-53-54, with 9 million kw to be added in 1952, 11 million in 1953 and 12 million kw in 1954, is out of the question. At least 3.5 million Kw of capacity scheduled for 1952 will be shoved back to next year, maybe further. Equipment makers were long ago booked to capacity for 1952 and 1953.

Dislocations Mean Fractures—All that additional electrical capacity is not irretrievably lost to industry and the slippage occurs when industry itself is retarded and not using peak loads of power. Unless the electric expansion program is revived at a rate comparable with other industries, though, more dislocations could develop. For instance, aluminum reduction

in the Pacific Northwest was hampered in September, 1951, through attempts to relieve a power shortage through curtailing use of electricity.

It's been estimated that the facilities to produce one kilowatt of electrical capacity can be built with 1/100th as much steel, copper and aluminum as that kilowatt can supply the power to produce in one year. Thus, for every kilowatt of capacity not produced which results in a continuous curtailment of power supply, 100 times as much critical material is is lost as would have been required to build each kilowatt of capacity.

Muscles Without Men—Loss of electric capacity in terms of muscle power is estimated by General Electric Co. as being equal to that of 15 million hard working men for each 175,000 kw generator not put into operation. To build just the boiler for a steam turbine of that size requires the equivalent of 51 railroad carloads of structural steel and 46 carloads of tubing.

The crux of the matter now is: Will electric power expansion get high priority ratings, together with defense work and atomic energy programs, so that the power will be available for those other programs when they get into production.

An indication that perhaps the electric utilities will not be forgotten in the post-strike scramble is the amendment to M-50 which allows utilities to exceed the 90-day inventory restrictions on copper and aluminum imposed by M-50. With such a relaxation, utilities will be able to accept and hold deliveries of these materials though they cannot be used within the prescribed time limitations.

Defense Projects Get Priority

Industrial expansion projects "critically important" for defense will get the steel they need in the fourth quarter. This will be accomplished, National Production Authority says, even if it means a delay in starting all other industrial and commercial construction, including those already approved.

Priorities for steel will be granted in this order: First, to defense projects already under way; second, for defense projects due to be started in the fourth quarter; finally, to other industrial and commercial projects under way.

The building of more aluminum facilities has been pushed 30 to 60 days behind schedule. The number of new construction starts in the fourth quarter will be far below those in previous quarters.

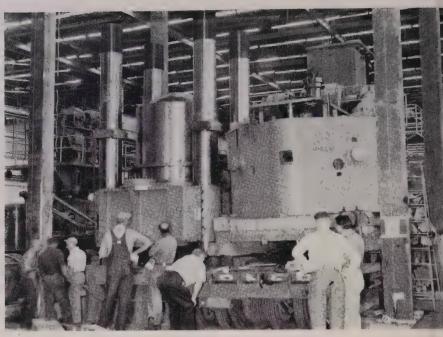
Certificates of necessity for accelerated tax amortization issued by Defense Production Administration through July 24 total 12,774, amounting to more than \$21.6 billion. The latest include: Yolo Steel & Metal Co., Sacramento, Calif., \$81,250,000, and Delaware River Steel Corp., New Castle county, Delaware, \$41.5 million.

New Steel Firms to Build

Two new companies are joining the iron and steel industry.

The Michigan Iron & Coke Co. Detroit, will establish a merchant iron and coke plant on the shore of the St. Clair river, south of St. Clair, Mich. Cost of the plant is estimated at \$25 million.

The newly organized Delaware River Steel Corp. has scheduled



Kaiser-Frazer Installs Large Press

Workmen install a 385-ton press in the Kaiser-Frazer Corp. Willow Run plant One of the largest used in the aircraft industry, it has a capacity of 7500 tons. It will process major stampings for the Chase C-123 and Fairchild C-111

building plans for a blast furnace and coke ovens, involving an expenditure of \$41.5 million. The new plant will be located in New Castle County, Del.

The new plant of Michigan Iron & Coke will consist of a blast furnace with a 300,000-plus tons annual capacity and about 55 coke ovens capable of producing about

350,000 tons of coke each year Delaware River Steel, incorpor

rated in Delaware April 25, plans to build a 1200-ton blast furnace with sufficient coking facilities the supply the blast furnace.

Production of the furnace will ga in part to meet the requirement of Claymont Division of Coloraci Fuel & Iron Corp.

Defense Production Administration Sets Expansion Goal

DEFENSE Production Administration announced expansion goals for 16 fields of industry and six metals and minerals. Most of the programs will be completed by 1954 or 1955. All except antimony will be assisted by certificates of necessity for fast tax amortization. Portions of some programs have been designated for small business.

DPA Ore Go	als, Targe	t Dates
PROGRAM (NE	T TONS PER Y	EAR) DATE
Tungsten ores	17,000	1954
Antimony	43,200	1955:
Titanium sponge	10,000	1955
Beryl (10% ore)	9,000	1955:
Barite	1,360,000	1955
Alaskan coal	950,000 J	uly 1, 1953

Defense Production Administration Goals for 16 Industries

			% OF CERTIFICAT
	GOAL		OF NECESSITY
	In TERMS OF		ALREADY ISSUE
PROGRAM	DOLLARS	TERMINAL DATES	FOR PROGRAM
Military aircraft	\$1,330,000,000		
Crawler-type tractors		Jan. 1, 1951-Jan. 1, 1954	90
Specialized photo equip.		Jan. 1, 1951-Jan. 1, 1954	77.6
High voltage switchgear	50,000,000	Jan. 1, 1952—Jan. 1, 1954	*
Electric storage batteries	14,500,000		Approx. 1003
Domestic telegraph system	50,000,000	Jan. 1, 1951-Jan. 1, 1955	**
Army-Navy elect. connectors	7,000,000	Jan. 1, 1951-Jan. 1, 1954	85.7
Gear & gear drive	20,000,000	Jan. 1, 1951-Jan. 1, 1954	85
Mech, power transmission		, , , , , , , , , , , , , , , , , , , ,	
(except gear and gear drive).	4,000,000	Jan. 1, 1951—July 1, 1953	66.7
Misc, metalworking equip	40,000,000	Dec. 1, 1950-Jan. 1, 1954	90
Machine tools	125,000,000	July 1, 1950-Jan. 1, 1954	97.6
Presses & forging equip		July 1, 1950-Jan. 1, 1954	67.9
Metal cutting tools		July 1, 1950-July 1, 1953	84.3
Dies, jigs & fixtures	33,000,000	July 1, 1950-Jan. 1, 1954	80
Abrasive products	34,000,000	July 1, 1950-July 1, 1953	92.1
Commercial carrier aircraft	***	Jan. 1, 1952-Jan. 1, 1955	35.7

^{*} Program is just starting and few certificates have been issued to date.
** Only 40 per cent is to be government-assisted.
*** Goal is 600 aircraft.

Inventory Headaches

Aircraft contractors have them again because of unbalanced stocks of parts and fittings

HERE we go again!

Eight years after a system was worked out for disposal of mountainous inventories of screws, bolts, nuts, valves, thermostats, switches, rheostats, circuit breakers, hydraulic fittings, connectors, plugs, bearings and other standard parts bulging the stock bins of 700 aircraft contractors of World War II, the spectre of idle and excess inventories again is stalking the industry.

Not Yet Surplus—As yet these "idle and excess" stocks cannot be called "surplus". One plant may be "long" on a certain size bolt or fitting while another may be short of the very same items. The problem is one of redistribution and how to do it.

Estimates of the total value of idle and excess inventories run from \$40 million to \$300 million, according to who makes the "guestimate." A sensible and fair plan for their redistribution should be delayed no further, in the opinion of manufacturers and suppliers.

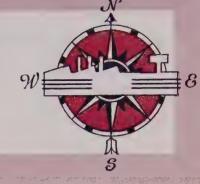
Complex—A transfer from one plant to another is not easy. Contractors are not equipped to sort, inspect, count, package and re-ship their own inventories, even if their sheer bulk may be impeding production. The military services might take over the job, but if this procedure were followed the middle men or "fast buck" boys might move in.

Reasons for inflated parts stocks are manifold. First is the fantastic production bogies which were set up when the post-Korea military aircraft program got under way.

Stretch-Out—Second is the cutback and stretch-out of aircraft schedules put into effect when it was realized original goals were unrealistic. This meant that materials already ordered and possibly shipped would have to be spread out over a longer period.

Third was overambitious ordering on the part of contractors, often through no fault of their

Metal Spinning: Ancient Art With a Modern Twist



THE METALWORKING world spins more than it used to—and it's been spinning since long before Christ. The exact date of the inception of metal spinning is lost, but the technique was well known during the middle ages, flourished in this country during the 1800s.

Today there are over 200 companies much of whose capacity is devoted to metal spinning and 900 more who do some metal spinning. Since the war many of these firms have doubled or tripled their capacity.



Cost Cutter - Stamping is the preponderant method of manufacture, but metal spinning is being used increasingly for some applications because of its economies. Tooling cost for spinning is lowin hundreds instead of thousands of dollars in most cases. But labor costs are higher and output is slower. If relatively few parts are required, the job may be done more cheaply by spinning than by stamping which requires expensive dies. Low runs of parts which ultimately will be stamped may be spun first to have pilot models or to get production rolling until dies are made.

Beyond the difference in the form cost when a part is spun and the die cost when a part is stamped, the material cost must



also be considered. A case in point is the production of TV picture tube cones. The stainless steel alloy needed costs about \$1.00 a pound. By spinning this part, five

pounds less material is required per unit and spinning gets the nod.

Unique Tricks—Its unique features give spinning another in with manufacturers. Where the part is open only at the small end, for example, it may not be possible to make a stamping. If it requires a reverse or beading on the edge, once again stamping may not be feasible.

Such a high volume part as the V-belt pulley used on Ford's radiator fan is made by spinning. National Stamping Co., Detroit, has developed a special machine to do the job.

Defense Aide—Defense relies on spinning for many key items—jettisonable fuel tanks, radar antennas, propellor hubs and spinners, cowls, air cleaners for vehicles and some aircraft instrument components. Other civilian items include aluminum washing



machine tubs, cooking ware, ball floats and air deflectors for air conditioner units, say William Bergfels & Co., Newark, N. J. and the Roland Teiner Co., Everett, Mass.

Spun parts range in diameter from a fraction of an inch to several feet and can be made from virtually any metal. Easiest to spin is aluminum; among the harder, stainless steel and Monel metal.

Busy Spinsters—Handling problem metals has been one of the big advances in the spinning field in the recent past and working heavier gages through hot-spinning has increased the method's versatility. Introduction of automatic spinning equipment in such jobs as the TV cone may be a harbinger of automatic production spinning equipment to come.

August 11, 1952 59

own. For example, if a plant saw a projected need for, say, 1735 AN bolts of a certain size and discovered that the bolt producer could not set up for so small a quantity at a sensible price but could make a minimum run of 25,000 at a reasonable figure, the tendency was to order the 25,000 and worry later about the overage. Engineering changes often obsoleted certain parts on a contractor's production.

Paradox—The situation is paradoxical in view of the reported slowness of military aircraft deliveries.

The problem was outlined at recent hearings of Cong. Chet Holifield's (Dem. Calif.) subcommittee on executive and legislative organization of the House Committee on Government Operations (formerly the Committee on Expenditures in the Executive Department). Representatives of industry, the production resources section of the Air Materiel Command at Wright-Patterson Air Force Base, Dayton, O., Army, Navy and General Services Administration were present.

Peterka Plan—They listened to a proposal for an effective plan of redistribution outlined by Brig. Gen. Kern D. Metzger of the AMC. It was patterned after the so-called "Peterka plan" which was activated in the spring of 1944 under direction of the Metals Reserve Corp. of the RFC. Its author was A. E. R. Peterka, then a lieutenant-colonel with the production resources section of AMC and now a divisional sales manager for Lamson & Sessions Co., Cleveland.

The Peterka plan (STEEL, June 5, 1944, p. 72) provided for sale of surplus government-owned aircraft materials in contractors' plants through the administration of MRC which certified as agents established distribution and warehouse interests throughout the country. They handled the sale and delivery of the material to subsequent purchasers at going market prices, less a prescribed fee.

The Job—Distributors had responsibility for inspection, handling, shipping, selling, advertising, billing and collection, turning receipts, less allowable fees, over to MRC. Aircraft contractors meanwhile screened their purchase



Maximum Strength: Minimum Weight

The rotor blades of this Piasecki HUP helicopter have maximum strength and minimum weight achieved by Rockrite compression-formed spar tubes processed by Tube Reducing Corp., Wallington, N. J. The tubes, which form the backbone at the blades, are rocked back and forth on semicircular, semitapered dies, forcing the metal against a mandrel which controls the inside diameter. Company of ficials say this imparts a better grain analysis to the metal, which improves the structural strength. Honeycomb structure is mounted over the finished tube and is covered with a milled aluminum skin. The tubing also will be used on the 44-place XH-16 being made by the Piasecki Helicopter Corp., Morton, Pc.

requirements against stocks of surplus materials available from the various warehouses participating in the program which were within reasonable shipping distance.

The system in general worked admirably, although the picture changed somewhat when the War Assets Administration later moved in. Untrained personnel, lax supervision and an over-all lassitude let the bars down and surplus disposal became a mild nightmare.

Shades of World War II—Now the surplus ghost is walking again. The RFC no longer has broad wartime powers to deal with the problem. For the present, the Navy has been assigned responsibility for redistribution through its Bureau of Supplies and Accounts. Material is being advertised on bid

sales, but it is being found that many contractors who could use part of excess inventories in other plants won't play ball because the would be required to take entire lots, which they could not use Furthermore such purchasing in foreign to their normal methods of procurement for which their personnel is trained.

Mr. Peterka states that another cogent reason for early action of redistribution is the matter of matterial and labor conservation. Many of the parts involved combain scarce and expensive alloys their value being principally in airroraft usage. To scrap them or divert them to other industries not requiring aircraft quality would be a foolish waste of money and matterial.

SELECTED DEFENSE CONTRACTS IN EXCESS OF \$250,000

PRODUCT

Milling Machines Wire Marking Machines Mortar Shells, 81 mm .

Motor Parts for Rockets
Cartridge Cases
Aircraft Parts
Generators
Radio Sets
Transmitters

CONTRACTOR

Van Norman Co., Springfield, Mass.

Ackerman-Gould Co., New York
Heywood Wakefield Co., Menominee, Mich.
Badger Meter Mfg. Co., Milwaukee
Evans Products Co., Plymouth, Mich.
New Monarch Machine & Stamping Co., Des Moines, Iowa
Bendix Aviation Corp., Eclipse-Pioneer Div., Detroit
Jack & Heintz Precision Industries Inc., Cleveland
AVCO Mfg. Corp., Crosley Div., Cincinnati
American Machine Metals Inc., E. Moline, III.

CHECKLIST ON CONTROLS

Materials Orders

LINE PIPE-Amendment 1 to NPA Order M-46 advanced from three to four months prior to the beginning of the quarter in which delivery is required the filing of applications for priorities assistance in the purchase of line pipe for small construction and production operations and for use as MRO in the oil and gas industries. It was issued and effective July 31, 1952.

PIG TIN-Amendment of Aug. 1, 1952, to NPA Order M-8 removed the prochibition against private importation of pig tin. It was effective Aug. 1.

MACHINE TOOL FINISHES-Revocation of NPA Order M-104 permits manufacturers of metalworking machines to apply protective finishes to their product without restriction as to content or limitation on the number of such protective coatings. Revocation was effective July 31, 1952.

WAREHOUSES - Amendment to Direction 3 of NPA Order M-6A, issued and effective Aug. 1, 1952, permits warehouses to ship oil country goods, including casing, tubing, drill pipe and couplings as well as goods in process, according to customer specifications on July 28, depite the warehouse freeze.

COPPER, ALUMINUM-Amendment 1 to NPA Order M-47A and an amendment to NPA Order M-47B permit manufacturers of consumer goods to divert part or all of their copper and aluminum allotments from functional to decorative use. Both were issued and effective Aug. 4, 1952.

COPPER BUILDING MATERIALS-Revocation of NPA Order M-74 and its Amendment 1 on Aug 4, 1952, negated the restriction on use of copper in production of downspouts, gutters, ornamental metal work, unit heaters, store fronts, gratings, drains, etc.

COMMUNICATIONS - Amendment 1 of NPA Order M-77, issued and effective Aug. 4, 1952, permits the operator of communications facilities to selfauthorize the following quantities of controlled materials: 5 tons of carbon steel, not including more than 2 tons of structural shapes; 1000 pounds of copper and copper-base alloys and 2000 pounds of aluminum, but no alloy, stainless steel, wide-flange beam sections or columns.

COPPER, ALUMINUM — Amendment 2 to NPA Order M-100, issued and effective Aug. 4, 1952, allows 275 pounds of aluminum and 200 pounds of copper and copper-base alloys per dwelling unit for one to four family houses with steel water distribution systems; for houses with copper pipe water distribution systems, 275 pounds of aluminum and 400 pound of copper products may be selfauthorized. If a forced hot water heating system is used, an additional 200 pounds of copper products may be acquired under self-certification, and a radiant heating system will allow for another 500 pounds of copper.

LEADTIME-Direction 6 to NPA Order M-1 reduces leadtime to 30 days on products calling for delivery in October for the military, atomic energy, machine tool and component programs. The cut in leadtime applies only to products normally having a 45-day leadtime. For October, the direction reduces to 7 days the time limit during which orders in these categories may be placed for delivery out of the military reserve. Direction 6 was issued and effective Aug. 1, 1952.

STEEL SET-ASIDES—Amendment 1 to NPA Order M-1, issued and effective Aug. 1, 1952, requires steel producers to reserve the percentages of their production listed below for military, atomic energy and machine tool orders starting in the fourth quarter, until 15 days before the expiration of leadtime. After that date, producers are required to accept authorized controlled mateials orders in order of precedence of receipt. The set-aside will cover all orders carrying the identification A, B, C, E, Z-2 and B-5 carrying the quarterly designation 4Q52.

Controlled Materials Plan

COPPER, ALUMINUM—Amendment 3 to CMP Regulation 6, issued and effective Aug. 4, 1952, raises the selfcertification limits for copper and aluminum for use in industrial construction, maintenance and construction of highways and all other types of construction except recreational and housing of one to four family units. Self-authorization of military, Atomic Energy Commission housing or recreation is barred. The ban on site fabrication of copper in construction for decorative purposes and

in gutters, downspouts, etc., is removed.

Price Regulations

IMPORTED COPPER-Amendment 23 to General Overriding Regulation 9 extended the exemption from price control to certain copper refined from ores, concentrate and raw materials purchased and imported between May 8 and June 16, 1952. This changed Amendment 21 to GOR 9 which extended exemption from controls originally to June 16, 1952. Amendment 23 was issued July 31, 1952, effective that date.

AIR CONDITIONERS, WATER HEATERS—Amendment 52 to Ceiling Price Regulation 22 relieved manufacturers of air conditioning equipment, with the exception of window and console self-contained units, and all water heaters from using Public Form No. 128 in reporting newly established ceiling prices for items not sold between July 1, 1949, and June 24, 1950. The amendment requires a description of differ-ences between comparison commodities and new commodities. It was issued July 31, 1952, effective Aug. 5.

COKE-Amendment 10 to Supplemental Regulation 13 of the General Ceiling Price Regulation exempts from price control all successor long-term contracts for coke, coal chemicals and coke oven gas, provided the new contracts contain terms as favorable to the purchasers as the original contracts. Amendment was issued July 31, 1952, effective Aug. 5.

Set-Asides of Iron, Steel Products for Fourth Quarter

PF	RCEN	TAGE*1
PRODUCT CAL	RBON	ALLOY
Part A		
Ingots	25^{2}	35
qual	100	3
Blooms, slabs, billets	25^{2}	353
Wire rods	17	25
Structural shapes, (heavy)		
std. sheet piling Structural shapes, wide	18	
flange and H bearing piling	17	_
Plates—rolled armor Plates—sheared and U.M		100
Plates—sheared and U.M	2 5	60
Plates—strip mill	20	40
Rails-standard over 60		
pounds	6	_
Joint bars	2 5	
Tie plates	6	-
Track spikes	5	
Wheels (rolled and forged)	U	
and axles	5	-
Bars-hot rolled, projectile	_	
and shell quality	4	5
Bars-hot rolled, other (including light shapes)		
cluding light shapes)	274	305
Bars-reinforcing straight		
lengths as rolled	20	
Bars—cold finished Tool steel	40	35
	23	25
Die blocks Standard pipe and couplings	10	60
	97	
—welded Oil country goods and	0'	
couplings—seamless	6	
Oil country goods and		
couplings—seamless Oil country goods and couplings—welded (includ- ing spiral weld)		
ing spiral weld)	6	process.
Line pipe and couplings-		
seamless	307	
Line pipe and couplings-		
welded (including spiral		
weld)	5	-
Mechanical tubing—seamless Mechanical tubing—welded.	35	37
Mechanical tubing—welded.	20 17	17
Pressure tubing—seamless Pressure tubing—welded	11	14
Wire drawn high and low	11	_
Wire, drawn, high and low carbon	15	25
Wire nails and staples (inc.	10	20
steel cut)	5	
Barbed and twisted wire	11	
Wire fence, woven and welded		
(farm and poultry)	6	-
Bale ties and/or coiled au-		
tomatic baler wire	6	-
Wire—rope and strand	15	printers
Welded wire mesh	10	
Netting—woven wire	5	-

Tin mill black plate..... 8

,	PERCEN	TAGE*1
	ARBON	
Part A		
Tin plate, electrolytic	. 8	
Tin plate, hot dipped		
Ternes-special coated mar		
ufacture		
Sheets-hot rolled		9
Sheets-cold rolled		9
Sheets, galvanized (include	1-	
ing roofing, and siding		
accessories		9
Sheets-all other coated		9
Sheets-enameling		
Strip—hot rolled		9
Strip-cold rolled		9
Electrical sheets and strip		
Low grade		
Medium grade		_
High grade	10	_
Castings, steel		
Armor		10010 11 13
Other	4512	4011 12
Part H		
Malleable iron castings	. 65	
Gray iron castings	., 60	6511
Pig iron		genne

*For products rerolled from rails or axle stee percentage applies against planned monthly

production,

No percentages for nickel-bearing stainless steel products.

This percentage is for any combination of the products, ingots, blooms, slabs, billets (excluding projectile and shell quality).

Set asides for alloy projectile and shell quality included in set aside for alloy blooms, slabs, billets.

Projectile and shell quality rounds and squares under 2%" included in bars—hot rolled, other. Projectile and shell quality rounds and squares 2%" and over included in billets—projectile and shell quality.

Set asides for alloy projectile and shell quality included in set asides for alloy brojectile and shell quality included in set asides for alloy bars—hot rolled, other.

hot rolled, other.

No military requirements anticipated for these items.

Seamless standard pipe production included with seamless line pipe production.

5-which percentage is for any combination of tin mill products.

30-which percentage is for any combination of alloy sheet and strip products.

No Subject to direct negotiation by NPA.

Alloy for steel and Iron castings means all grades not included as stainless or carbon (includes low alloy) steel and iron eastings.

Percentages apply against planned monthly production.

Windows of Washington

Congress is putting a feather in inventors' thinking caps. This year a new patent law, next year an incentive plan. The whole project looks promising

CONGRESS gave inventors a monumentally revised patent law this year. Next year it is going to give them an incentive to invent.

Preparation and enactment of Public Law 593 by the 82nd Congress constituted the first revision and codification of the patent laws since 1874. Obsolete and redundant provisions have been eliminated. For the first time in our patent law history, the new law describes those features of the law which exist by reason of court decision rather than by acts of Congress.

Important Changes — Whereas the old law provided that a patent may be obtained by a person who has invented or discovered any "new and useful art," the new law has substituted the word "process" for the more indefinite word "art." Past confusion and uncertainty has been eliminated by defining infringement and contributory infringement. Another important change allows patent application by other than the inventor.

To give all interested parties a chance to familiarize themselves with the new law, its effective date was set as Jan. 1, 1953. Copies of the law and House Report No. 1923 which explains it may be purchased from the Superintendent of Documents, Government Printing Office.

Incentive Coming — Inventors who contribute to defense and the national welfare will be voted a bonanza next year. When Congress adjourned the House Judiciary Committee had almost completed work on proposed legislation authorizing cash awards up to \$75,000 by a proposed "Inventive Contributions Awards Board" and was contemplating still larger awards by special acts of Congress.

Originally it was proposed to grant such awards for inventions contributing to the national defense. The House committee liberalized this concept by authorizing awards for all inventive contributions, patentable and unpatentable, considered helpful to the national

Another Old Soldier-

WHEN Ellis Arnall became price stabilizer on Feb. 21, the job looked like a routine political plum. Mr. Arnall announced the line established by Mike Di-Salle would be held, smilingly entered his Washington command post to watch the holding. But housewives began to find his counter-intelligence proving inadequate. The price index began to edge up.

Then with the steel strike the "holding" action turned into one of the hottest battles since the entire conception of price control. Steel companies said they would need more than the Capehart increase to meet workers wage demands. Mr. Arnall was adamant. He marshalled his forces at the Capehart line and said, "They shall not pass." They did. His superiors erased the line.

Watch for Mr. Arnall to resign his command about Sept. I.

defense and/or the national welfare.

Board Approved—The broader view, aimed at providing adequate incentives already has been adopted by the inter-agency working committee of Government Patents Board. It recommends a system of rewards to government employees for "meritorious creative contributions useful in the performance of all government functions and operations."

Pulled Any Bonus Boners? . . .

Companies violating edicts of the Office of Salary Stabilization are going to get hit where it hurts—in the pocketbook. Each regional office of OSS now has an enforcement attorney backed by an investigation unit. Since the start of the enforcement campaign May 5, a total penalty of \$53,876 in tax disallowances has been imposed—and this is only a start.

Says Jeeter S. Ray, OSS chief

counsel: "We are after the deliberate violators, and they will suffer full consequences."

In most of the cases of tax disallowances to date, says Mr. Ray, the employers granted excessive bonus payments.

Synthetic Gas: Knocking . . .

In an effort to stimulate private interest, Interior Secretary Chapman has just issued another two-volume report on Bureau of Mines progress in developing processes for synthesizing liquid fuel from coal and oil shale.

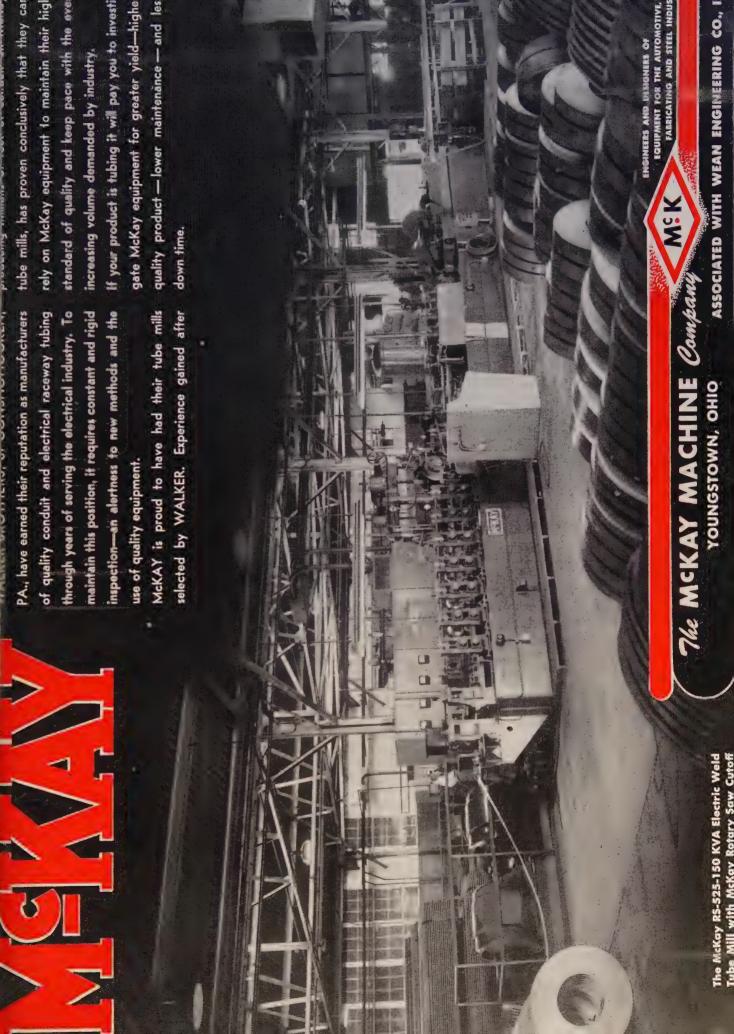
So far there have been no takers of the synthetic liquid fuel package although the government is authorized to offer encouragement through loans, rapid amortization and a guaranteed market at firm prices. The factor of uncertainty is that of cost. Bureau of Mines says that synthetic gasoline from a plant of commercial size would cost 11 to 17 cents a gallon, allowing credits for the accompanying production of chemical by-products, but in industry circles the estimated figures are substantially higher.

The development is of interest to the metals industries. Bureau of Mines estimated that for eight coal hydrogenation plants having daily capacity each of 30,000 barrels of liquid fuel, the steel requirement—much of it in fabric cated forms—would be 1 million tons. Oil-shale plants would have smaller steel requirements but they still would be on the order of three tons of steel for each barrel or daily capacity.

No Danger, Know How . . .

Industrialists serving in the defense agencies will not share in the staff reductions now under way as a result of reduced appropriations

While the law states that industry men must be replaced by full time government employes where qualified people are available, the catch is that for top jobs requiring an intimate knowledge of the complex functioning of an industry, or industries, only industry men have the essential training and experience.





Cold water strikes red hot metal in end-quench hardenability test—first step in Ryerson quality control.

RED HOT REASON for Buying Ryerson Alloys

There is no question about it—our end-quench hardenability tests certainly simplify your job of buying and heat treating today's interim and lean alloys. With the hardenability of your particular steel thus definitely determined, the other mechanical properties can also be predicted—with confidence.

These hardenability tests are but one step in a unique program that makes Ryerson alloys easier to buy and safer to use. Starting with careful selection of every heat carried in Ryerson stock, the plan follows clear through to the certification of analysis and hardenability that is sent with every shipment of as-rolled or annealed Ryerson alloy steel.

Now more than ever this Certified Plan makes Ryerson your best source for alloys. Though defense demands are taxing even our extensive facilities we can undoubtedly take care of most of your requirements. So for quick shipment of pre-tested alloy steels which you can buy and heat treat with confidence, call the nearest Ryerson plant. And remember we also carry heat treated alloys in stock for immediate shipment.

PRINCIPAL PRODUCTS

CARBON STEEL BARS—Hot rolled & cold finished
STRUCTURALS—Channels, angles,

beams, etc.

PLATES—Many types including Inland 4-Way Safety Plate SHEETS—Hot & cold rolled, many

TUBING—Seamless & welded, me-chanical & boiler tubes

ALLOYS-Hot rolled, cold finished,

STAINLESS — Allegheny bars plates, sheets, tubes, etc.

TOOL STEEL—Oil and water-hard-ening types, ground flat stock REINFORCING—Bars & Accessories, spirals, wire mesh

MACHINERY & TOOLS—For metal

RYERSON STEEL



JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK . BOSTON . PHILADELPHIA . CINCINNATI . CLEVELAND . DETROIT PITTSBURGH . BUFFALO . CHICAGO . MILWAUKEE . ST. LOUIS . LOS ANGELES . SAN FRANCISCO . SPOKANE . SEATTLE



Punjab Buys Disconnect Switches

Westinghouse Electric Corp., East Pittsburgh, Pa., has shipped 68 high-voltage type V disconnect switches for outdoor substation apparatus to the government of Punjab, India. Many were equipped with grounding blades. Thirtythree were 161-kv three-pole switches like those above. The rest were 196 kv

High-Priced Steel Runs Down

Belgians find they can't sell their steel without consideration of price. Their answer is to slow down the mills, cut workers' overtime, offer price reductions

INDICATIONS are that the heyday of high-priced steel is just about over for foreign producers. One of the biggest European producers, Belgium, has cut prices and workers' overtime in an effort to induce fatter order books.

In 1951, Belgium's monthly average steel output was about 479,600 net tons. That was half again as much as in the immediate pre-World War II years. In April of this year the Belgian output was 473,000 net tons; May output totaled 463,570 and by June the total was only 429,550 net tons.

Orders Are Slipping - Belgians are quick to point out that the decrease cannot be explained by such factors as the number of working days-25 in June compared to 26 in May-but that it can be explained by a drastic drop in the amount of orders received. Even some of the very largest Belgian steel mills report they are working on a week to week basis, back orders having fallen of late.

To combat the lag in orders, Belgo-Luxemburg steelmakers decided on these reduced export

prices compared with prices as of April of this year: Merchant bars, now \$115 per metric ton instead of \$130 to \$135; heavy and medium sheets, now \$155 instead of \$190; and wire rod, \$100 instead of \$135 to \$140. Special bargain prices are offered to the dollar countries based on an average of \$105 per metric ton for merchant steels.

Wages Are a Factor—While factors such as premium-priced raw materials have contributed to the high cost of Belgian steel, probably the biggest item of growing expense and the one the Belgians are trying to reduce most right now is that of wages and salaries to workers. Belgian law sets the maximum work day at 8 hours, with a 48-hour week. Current practice is to pay for the 9th hour at 25 per cent more than the agreed hourly wage and for the 10th or more hours at 50 per cent or more over the agreed hourly wage.

The index of wages for steelworkers has been constantly creeping up since 1946. According to a survey held in the ten most important steelworks by the Com-

mission Paritaire Nationale de la Siderurgie, it rose as follows:

	Normal	Total
Average*	Wage**	Wage Paid***
1946	305	358
1947	356	412
1948	388	472
1949	402	469
1950	418	502
1951	484	567

Return to Normal-So the order of the day in Belgium is a return to more or less normal production rates in steelmaking with the emphasis on reducing overtime. Traditional ore suppliers such as the Luxemburg mines, and coal suppliers are being pressed to cover these normal needs and thus reduce costly imports.

Japan Beckons to Investors

The foreign investment law in Japan, revised as of July 1, provides that original investments may now be repatriated in full at the end of seven years contrasted with the old law which provided that only dividends could be remitted in the foreign currencies.

Following closely on that revision is word that Hirio Diesel Cy of Japan is working on an agreement with Renault for assembling and selling their cars in Japan. It's estimated that the Japanese will buy 90,000 cars in the next five years, of which 33,000 will come from abroad. French sources say these foreign-bought cars will be European rather than American because the former are smaller and cheaper and burn less gas.

Hobbles on Exports Overcome

Syracuse Smelting Works, export division of United American Metals Corp., has completed its smelting plant in Brescia, Italy. The plant will produce babbitt or bearing alloys and type-metal to serve UAM's European trade.

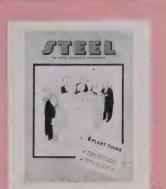
Decision to erect the Italian plant came with the growth of restrictions on exports to Europe following World War II. As an assurance of quality in the Brescia plant, samples of every batch of metal are sent daily to the home plant in Brooklyn by air mail for chemical and physical examination.

65 August 11, 1952

^{*}Last 3 months of the year.

**Based on 1936-1938=100.

***Includes pensions, overtime, social se-



Plant Tours Are Helpful . . .

CUSTOMERS learn what your plant can do. They see the capacity of your equipment and the up-to-dateness of your plant. They see the skill of your workers and the care used in inspection. They note the efficiency of your operations and will like the frank way you show it.

EMPLOYEES learn how their jobs fit into the over-all production pattern. Plants report employee tours foster better teamwork, higher morale. Many plants even attribute a rise in production to increased pride, closer interdepartmental co-operation fostered by plant tours.

COMMUNITIES learn what the plant means to them. They lose hostility toward smells and noises emanating from the plant. They understand more fully the workings of free enterprise and the role of free enterprise and role of profits in our economy.



Companies Seek Company: Plant Tours Pay Off

SUPER-SALESMAN—that's the modern plant tour. It doesn't invite people to "just look around." It's a hard-hitting, aggressive seller that drives your story home and clinches it. That's why plant tours are on the increase as alert management builds better relations with employees, with customers and with the community.

Plant tours have always had great drawing power. Seven out of ten people say they'd like to go through a plant in their community. Eight out of ten people who take a plant tour say they would like to come back again next year. That means plant tours are a natural as a communications device. The backdrop of equipment captures and holds the visitor's attention and enables management to give him the facts in a way he cannot doubt—he has seen for himself.

The New Approach

An effective plant tour doesn't just happen. Careful planning is required to put into a plant tour just what the visitor should get out of it. Letting the facts speak for themselves may give precisely the wrong connotation. Here's an example from a general plant tour:

"This machine makes 6000 dinkuses an hour. It works to .0002inch accuracy. It does the work of four men using older style machines." The visitor reaction may well be: "Do faster machines mean fewer jobs? Companies must make four times the profit."

A plant tour like that works

against itself, gives the visitor the wrong impression or a confused impression.

Now take a look at the new approach:

"This machine cost \$20,000. The profits of this company were necessary to buy it, for the man running it could not have bought it for himself to provide his job. Machines like this have lowered the cost of products to the consumer so that people could buy more. That has made even more jobs and raised wages in the plant." The visitor reaction is: "It takes a lot of profit to buy machines and create jobs. Machines lower prices, make more jobs and bring about a higher standard of living. Profits are a good thing."

Studies have indicated that such impressions are typical of what the visitor remembers after a plant tour *designed* to sell free enterprise and social usefulness of the plant. You can design a plant tour to tell your story, too.

Here's What It Takes

Cost — Can be from virtually nothing to several thousand dollars, but remember this: Cost is no index of success. An inexpensive tour that has a unified theme and is carefully planned to get it across will be much more successful than a Hollywoodish hodge-podge. Concentrate on getting your idea across interestingly and effectively and don't throw in a lot of superfluous entertainment.

Personnel — Guides are needed who know the plant thoroughly

and it's better if they're not toplevel management. Visitors are most impressed if ordinary workers are sold on the company as a good place to work, so lower-level supervisors like foremen make the best guides.

You'll need one guide for each group of ten to twenty persons making the tour under production conditions. If the plant is being operated by a skeleton crew groups can be larger without becoming unmanageable, or it's possible to mark the route and utilize posters to explain what's going on without using guides at all. If you plantours frequently, train enough guides to give the tours so that you won't interrupt busy personnel to give them.

Frequency — Most firms hold general plant tours every one to five years depending in part on the size of the community and other factors determining the need for a tour. Small groups (customers civic groups, etc.) may wish to go through the plant as often as once a week, but once you are set up to give the tours with posters and guides ready, you can give them as often as desired with little expension effort.

Planning—For a complete oper house, better allow for one to simonths' planning to be sure as details are arranged properly. Appoint a co-ordinator to handle things and avoid snafus. For smaller groups, you should be able to set up posters and arrange refreshments on a few days' notice

. . . Consider These Facts

DOES PRODUCTION FALL OFF? Studies show that production actually increases during the time a tour is in progress. Apparently workers are tempted to show off for their audiences. (Guides can answer questions so production workers aren't interrupted.)

WHAT SIZE FIRMS HOLD THEM? Right now the bigger companies do, but the trend is toward smaller companies. Small firms that tried plant tours like them just as the big companies do.

WOULD OUR PLANT INTEREST THE PUBLIC? If you've seen sidewalk superintendents watching a power shovel, you shouldn't wonder about the answer to that question. Your plant is so familiar to you that it may seem uninteresting, but don't worry: It'll be unusual to your guests and they'll be interested.



Here are the things that you'll have to take into consideration:



Plant Tour Steps

EVALUATE PURPOSE—Don't do all things for all people in one tour. Decide just what the tour should do and whom it should reach.

It is usually preferable to invite a group because responsibility for attendance is on the group's leadership and the company knows in advance just how many persons to expect.

PUBLICIZE WIDELY — Newspaper, radio announcements and posters are effective in community-wide tours. Invitations with r.s.v.p. enclosures serve well for smaller groups and aid in planning refreshments, number of guides required, etc. Directions for reaching the plant should be included.

PROVIDE FOR COMFORT—Make adequate arrangements for parking well in advance of the tour and mark clearly. Rest rooms should be clearly marked. Provision should be made for supervision of small children if necessary. Invited or not, they often arrive with their parents.

PLANT ROUTE—If possible, the route of the tour should follow a logical sequence of manufacturing, or from simpler operations to more

complex. Try to give the tour a logical meaning so that visitors can integrate what they learn. If there are danger areas, plan the route to by-pass them. Rope off oily stock or other things along the route that might soil Sunday clothes. Decide what equipment and machines to operate with a skeleton force so that guests can see representative operations.

SELECT THEMES—Decide on a few main points that tell the story decided on. Keep them simple for a mass of detail confuses. Basic principles will stick.

For customers, good themes might be: "Efficiency makes lower costs"; "Care in manufacture lowers complaints"; "Planned production meets delivery dates." For employees and their families, themes such as "Cleanliness means health"; "Modern equipment means higher output and higher wages"; "This plant makes wealth in the community."

DRIVE THEMES HOME—Repeat them at every appropriate opportunity along the route for repetition makes points stick, too. Tie your points into the tour in the guide's descriptions of equipment and through charts and signs where applicable. One particularly effective technique for a general tour is putting a sign on each piece of equipment telling the price with a key slogan like "Capital makes jobs."

TRAIN GUIDES — Guides should understand thoroughly the purpose of the tour and the part they play in its success. The guide should have an easy, understandable and chatty talk prepared for each part of the tour. "Prepared" means just that. His talk should be memorized—don't rely on inspiration. Quieter spots along the tour should be chosen for his remarks to permit better hearing. The guide should be a good host.

KEEP IT SHORT, FRIENDLY—Two hours is a maximum for sustained interest in the tour itself. Standing and walking for a longer period will probably prove boring to guests. Other activities can be added such as movies of the industry, luncheon, short talks by company officials or recreational or social programs beyond the time consumed by the tour proper.

USE EXHIBITS—Use exhibits to clarify and interpret the plant and its functions. Don't rely on questions or guides' talks to tell the whole story. Use raw materials, parts and finished products to explain where your company's money goes, how it benefits everyone living in the community. Use sample advertisements and company customer activities to explain the import of your product, where it fits into the economy and what it means to people viewing the display.

Providing an attractive pamphlet covering the main points of the tour can serve two purposes: It will re-emphasize and fix in the visitor's mind the themes of the tour; and it may bring out points he missed during the excitement of the tour itself. He can show the booklet to friends, too, so the tour will get points across to people who didn't actually take it.

—That's the plant tour on a new theme—aggressive selling. It can sell everything from efficiency to free enterprise in concrete, meaningful terms. It can tell your story in a way no other medium can.



The Tyson operator says, "It takes no time to get set, less than most other machines I've worked on. We can cut anything that we can hold on this machine. We have never found the limit of how much we can cut — if it's a rugged piece, she sure gets a good bite."

Another statement in this plant illustrates the utility value of

Man-Au-Trol V.T.L. "Most of our work is short runs — from 2 to 16 hours

for one part. Only occasionally do we run as much as five days on the same

part. That's why we like the great Flexibility of Bullard Man-Au-Trol. With the former machines we set one
for single purpose boring, another for the turning of cups. Man-Au-Trol does the whole job. I don't know of
any machine that does as many operations with such simple tooling."

If this works for Tyson, perhaps it can be Profitable for you.

Ask a BULLARD man to survey your jobs.

THE BULLARD COMPANY BRIDGEPORT 2, CONNECTICUT

Mirrors of Motordom

Autoworkers start back to their jobs, but August production will probably be sketchy. Steel buyers expect little help from conversion or foreign sources

DETROIT

THE TREK BACK to work began last week for a scattering of auto workers and more will re-enter their plants today for the first time since early July.

All of the current planning of the automakers, however, is couched in a big "if"—if steel deliveries are orderly and balanced and in large enough quantity.

Matter of Economies—Building automobiles is not a process which can be started at a low level and then gain momentum as more material is received. Producers have to consider their breakeven points, and resume production only when there is good indication that the assembly lines will be able to operate above those figures.

Automakers generally saw the outlook brightening when they heard the news that the military would not try to make up for its lost steel receipts all at once. But there are so many preferential customers, such as warehouses which

will be getting initially a higher proportion of the available steel than formerly, that the auto industry realizes its production during the rest of the year will be touch and go.

First Aid?—The help expected from conversion steel will be welcome, but will be only a drop in the bucket as measured against the industry's total needs. One purchasing man who has been trying to line up ingots and rolling space believes that far less steel can be corralled by this procedure than was possible in the postwar period.

For one thing mill facilities are better balanced. Much expansion in the steel industry has been aimed at leveling out the bulges in ingot or rolling capacity which made conversion possible. Furthermore, many of the ingot sources, such as steel foundries, which were in a business drouth except for conversion during the early postwar years are now booming from defense work. And to cap the situa-

tion off, the auto industry which invented conversion is now the Johnny-come-lately, the petroleum industry being the big frog in the steel conversion puddle.

Starved—The steel gray market is almost as dead as a dodo. The steel strike nourished it a little, but its operators are on starvation rations, and the consumer's tight hold on the dollar makes the auto industry unwilling to feed the daisy-chain boys anything but crumbs.

Foreign steel is hard to obtain, and costly. The several-month delay between placement of an order and its receipt makes this source of small use in the present situation. Such hard-to-get items as forging billets were being imported before the strike and the additional tonnage which can now be contracted for is probably small.

Output Slides — The only thing that effectively tells the story of the steel strike's impact on the automotive industry is the production figures. Employment and unemployment figures fail to tell it all because many companies used their production shutdowns for inventory and maintenance work, and some truck makers used the strike period for vacation. Nevertheless, in Michigan more than 350,000 workers are idle, the greatest number since World War II. Of these about 250,000 are in Detroit area.

The table showing the big three's performance for July, as contrasted with June, nutshells what has happened. August probably will show a slight improvement.

How the 'Big Three' Stack Up Production-Wise

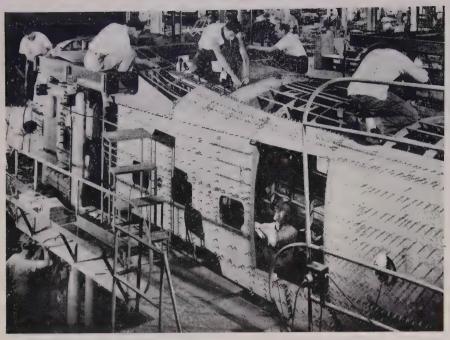
(United States Output Only)

				,	
	July	June	Seven Months	July	Seven Months
	1952	1952	1952	1951	1951
Chevrolet	21,932	81,793	483,884	90,729	730,343
Buick	13,556	30,021	182,628	30,067	261,788
Pontiac	12,384	25,258	154,833	25,015	221,461
Oldsmobile	9,283	21,048	128,462	21,640	184,961
Cadillac	7,561	8,860	54,639	8,577	64,715
Total GM			1,004,446	176,028	1,463,268
	0 .,,		.,,,,,,,,	0,	.,,
Plymouth	15,085	43,017	259,147	42,816	418,497
Dodge	8,820	23,253	140,832	20,602	207,031
Chrysler		11,679	71,978	11,485	105,070
DeSoto		9,463	54,618	8,798	74,003
	- /	*	•	83,701	804,601
Total Chrysler .	32,377	87,412	526,575	03,701	004,001
P I	05.004	/7 /00	207.272	/7 100	507.004
Ford	,	67,699	387,363	67,138	586,284
Mercury	9,937	17,477	98,130	17,784	152,579
Lincoln	3,241	2,869	18,721	2,200	17,475
Total Ford	38,262	88,045	504,214	87,122	756,338
Total	,				
Big Three	125 255	342,437	2,035,235	346,851	3,024,207
big initee	100,000	342,437	2,000,200	340,031	3,024,207

Problem of Conversion

On the question of conversion steel there seemed to be considerable uncertainty in the industry last week as to its status. There was talk that special CMP tickets would be issued for its use, and the suggestion had been made that it be freed entirely, like foreign steel, as an incentive for its purchase. Asked about the first of these possibilities, Frank T. Mc-

(Material in this department is protected by copyright and its use in any form without permission is prohibited)



600-Mile-Long Assembly Line

Chrysler Corp.'s Plymouth plant at Evansville, Ind., is one terminus of what Chrysler calls the 600-mile-long assembly line. Since November, 1951, the plant has been making hulls for the Grumman Albatross air rescue amphibicus plane. The hulls are shipped by special truck trailers to the Grumman Aircraft Engineering Corp. plant at Bethpage, Long Island, N. Y., for final assembly

Cue, deputy director, NPA Iron & Steel Division, said: "That's all talk as far as I know." He emphasized that to buy ingots or slabs or any other form of domestic-made steel requires CMP tickets, but that if a situation should develop in which existing ticket holders might not care to buy ingots or other semifinished forms because of cost or other considerations other companies might be permitted a special allotment for its purchase.

The price of conversion steel—a big reason for its having been discarded back in February or thereabouts by most automakers—now appears cheap as a means of getting production back to a creditable level.

Automakers Ponder Prices

The increased price of regular steel will not be used by automakers as a reason for raising car prices, according to present indications. No companies are tipping their hands yet if they are considering increasing their car prices.

Gone completely is any chance for price reductions this year. Some of the erstwhile slow-moving cars are now in brisk demand, and trade-in allowances on used cars are reportedly pathetically small. There undoubtedly will be no trouble for the makers and dealers in cleaning up their 1952 model runs prior to new model introduction.

Personnel Shifts for Big Three

Personnel changes are again much in the news as Ford, Chrysler and General Motors realign civ-

Austra W		Augusta in
	ruck Ou . and Canada	TPUT
	1952	1951
January	409,406	645,688
February	467,691	658,918
March	517,207	792,550
April	576,505	680,281 -
May	546,674	695,898
June	. 560,952	653,682
July	225,500*	522,858
August		571,442
September .		505,758
October		558,971
November .		480,199
December :		402,729
Total		7,179,161
Week Ended	1952	1951
July 5	86,036	98,087
July 12	70.592	117,747
July 19	32,442	131,419
July 26	42,514	131,598
Aug. 2	22,615	117,010
Aug. 9	38,500*	97.351
Association,	motive Manus Ward's Auto	motive

ilian and defense work assignments.

At Ford, the Ford division's manufacturing operations have been broken down into two major areas, each headed by an assistant general manufacturing manager. Under James O. Wright's control come quality control, technical services, process analysis, manufacturing standards and manufacturing planning departments. He also is the liaison man between other divisions supplying Ford division. W. D. Singleton will be in charge of departments closely related to the operation of the division's 15 assembly plants. Directly in charge of the assembly plants themselves will be J. B. Howard, as production manager, but Mr. Singleton will head up in addition to the assembly plants department, production control, traffic, plant engineering and manufacturing engineering departments.

Ford's tank division also undergoes managerial changes as Edward J. Hildebrandt, formerly general superintendent, automatic transmission division, and superintendent of tractor production, Highland Park division, becomes general manufacturing manager, and Nevin L. Bean, assistant chief tool engineer of the company, is named as manager of the production engineering department in the tank division.

Named to head up Chrysler Corp.'s Detroit tank plant (formerly the tank arsenal) as general plant superintendent is Charles Harmon. Mr. Harmon had been assistant superintendent of the arsenal when it was in Chrysler's hands in World War II. He has been on special assignment to the works manager of the Chrysler Newark, Del., tank plant since January, 1951. Superintendent of assembly at the Detroit tank plant is Roman Andrysiak. As an employee of the ordnance department, Mr. Andrysiak was chief civilian inspector at the plant during the war and since 1948 has been general foreman of assembly.

General Motors Corp.'s directors have elected Robert M. Critchfield, last month named general manager of Pontiac Motor Division, a vice president of the corporation and a member of the administration committee.



THE SYMBOL OF QUALITY

IN ELECTRIC FURNACE STEELS

STANDARD STRUCTURAL ALLOY . BEARING QUALITY

ALLOY TOOL . SPECIALTY . NITRALLOY . CARBON

TOOL . AIRCRAFT QUALITY

Hot Rolled • Forged • Annealed • Heat Treated • Normalized

Straightened • Cold Drawn • Machine Turned • Centerless Ground

COPPERWELD STEEL COMPANY

WARREN, OHIO

1578 Union Commerce Bldg. Cleveland, Ohio

> 1140 Lockwood Drive Houston 20, Texas

> > 1235 6

176 W. Adams Street Chicago, Illinois

3104 Smith Tower Seattle, Washington P. O. Box 1633 Tulsa, Oklahoma

803 Loew Building Syracuse, New York

528 Fisher Building Detroit, Michigan 117 Liberty Street
New York, New York

325 W. 17th Street Los Angeles 15, Calif. 7251 General Motors Bldg. Detroit, Michigan

Monadnock Building
San Francisco 5, Calif.

Sell Your Scrap...

August 11, 1952

71

GAGE USERS REPORT GRAPH-MO OUTWEARS OTHER TOOL STEELS 3 TO 1

Reports from gage users who have switched to Graph-Mo® steel gages show that Graph-Mo outwears other tool steels an average of three to one!

Graph-Mo wears better because it contains free graphite and diamond-hard carbides. This structure gives excellent resistance to abrasion and has minimum tendency to pick up, scuff, or gall. Tests on Amsler Wear Machine show Graph-Mo has twice the resistance to galling when compared with ordinary tool steels.

MACHINES FASTER

Constant Pressure Machinability tests show that Graph-Mo machines 30% faster than other tool steels. This is due to Graph-Mo's graphitic particles—a feature which is exclusive with Graph-Mo.



Measuring Graph-Mo steel master plug gage in 12-year stability test. Gage changed only 10 millionths.

GREATER STABILITY, TOO!

During a twelve-year period, the Timken Company measured at frequent intervals a typical master plug gage made of Graph-Mo. As shown by the figures below, the gage size at the end of that time measured within ten millionths of an inch of its original dimension.

1940-1.73996	1944—1.73996
1941-1.73995	1945-1.73995
1942-1.73998	1948-1.73997
1943-1.73997	1951-1.73995

You can always tell Graph-Mo by its "graphitic look"—the tiny, scattered, parallel marks barely visible on the surface of a piece of polished Graph-Mo. This built-in "trade-mark", the result of free graphite in its

structure, can't be duplicated in other steels. Look for it, insist upon it, next time you buy gages.

For further information on Graph-Mo—a Timken graphitic tool steel—write The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Photomicrograph shows graph itic particles in Graph-M steel.

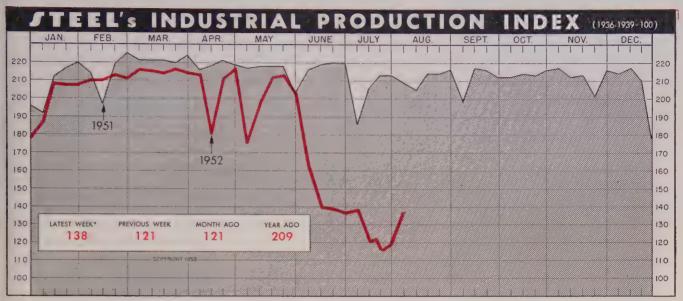
YEARS AHEAD - THROUGH EXPERIENCE AND RESEARCH

I ADDIMAN ENGLY HARON

Fine Alloy

SPECIALISTS IN FINE ALLOY STEELS, GRAPHITIC TOOL STEELS AND SEAMLESS TUBIN

The Business Trend



*Week ended Aug.

Based upon and weighted as follows: Steelworks Operations 35%; Electric Power Output 23%; Freight Car Loadings 22%; and Automobile Assemblies (Ward's Reports) 20%

Many metalworking companies will be forced to cut output in the months ahead as more steel is pipelined to defense uses. Industrial activity jumps as steel output rises

MANY ASSEMBLY lines will move at slower rates in the post-strike months ahead than when the nation's steel output was only a trickle.

Reason for this is that defense will take considerably more than its normal share of steel produced in the next three months. Before the strike, about 12 per cent of the basic steel produced was earmarked for defense orders. government now says it will pipeline 14.5 per cent of the steel output to manufacturers producing defense goods. Even so, some defense plants will be forced to cut severely their output this month and next because of the shortage of steel. Many makers of small arms ammunition and combat vehicles will again trim output this With defense lagging, month. fabricators of civilian steel products will be even worse off.

Makers of large consumer durables—who were among the first hit by the steel shortage—probably will have to halt more assembly lines in the next few months. Add to these companies manufacturers of smaller steel products who are at present scraping the

bottom of their inventory barrels. Many of these companies won't get pre-strike deliveries of steel until early 1953.

Index Jumps — As steelmaking furnaces were fired up and the industry started its return to normal production, STEEL's industrial activity index jumped 17 points to 138 per cent of the 1936-1939 average in the week ended Aug. 2. That's a rise of 21 percentage points from the 1952 low recorded in the week ended July 19. Steel production, rising from 15.5 to 43.0 per cent of former capacity, was the sole factor in the index's rise. Automotive operations were pushed down to the lowest turnout in over six years, while freight car loadings and electric power generation declined slightly in the week ended August 2.

Steel Output Snaps Back...

Steel plants continued their climb to normal output by producing nearly twice as much steel last week as in the previous week. Steel production reached 1,737,000 net tons in the week ended Aug 9, compared with 891,000 net tons in-

gots and steel for castings turned out in the previous week, estimates the American Iron & Steel Institute. This compares with the month-ago turnout of 295,000 net tons and production the week just before the strike when plants produced 2,091,000 net tons of ingots and steel for castings.

Near Blackout in Autos . . .

Rocking from blows of the steel strike, the automotive industry is hoping to return to volume production in September. But this will take place only if U.S. auto and truck plants use every available method to pipeline steel to production lines. This will necessitate considerable dependence on conversion practices, as steel supplied by the auto firms is shipped to mills with open capacity for rolling to automotive specification. Despite efforts to regain lost production now, the steel walkout will slash deeply into 1952 auto output.

Before the strike, U. S. auto companies were expected to roll out some 4.3 million passenger cars this year, but now the industry will be fortunate if it can shove output to 4,150,000 units, says *Ward's Automotive Reports*. And this goal will be attained only under favorable conditions in the remaining months of 1952. Auto

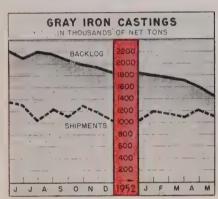


Steel Castings

Thousands of Net Tons

	Simpinency		Unmieu	Olucia	CIO	
	1952	1951	1952	1951		
Jan.	 183.7	174.1	869.3	675.4		
Feb.	 174.6	164.0	856.9	707.4		
Mar.	 173.7	190.7	857.1	779.7		
Apr.	 175.1	181.9	843.0	846.9		
May	 173.6	189.2	804.7	881.7		
June	 	184.7		895.1		
July	 	147.2		930.0		
Aug.	 	177.1		944.2		
Sept.	 	160.7		918.0		
Oct.	 	189.9		891.5		
Nov.	 	176.7		865.0		
Dec.	 	165.1		846.4		
Total	 2	2,093.3				

^{*} For Sale. U. S. Bureau of the Census.



Gray Iron Castings

Thousands of Net Tons

	Shipments		Back	Backlogs*	
	1952	1951	1952	1951	
Jan.	 1,199	1,364	1,801	2,298	
Feb.	 1,155	1,234	1,766	2,392	
Mar.	 1,172	1,440	1,711	2,390	
Apr.	 1,205	1,363	1,614	2,337	
May	 1,101	1,396	1,459	2,229	
June	 	1,309		2,162	
July	 	1,029		2,208	
Aug.	 	1,219		2,145	
Sept.	 	1.115		2,055	
Oct.	 	1,302		1,983	
Nov.	 	1,184		1,934	
Dec.	 	1,032		1,847	
Total	 	13,768			

^{*} For sale, U. S. Bureau of the Census.

MALLEABLE IRON CASTINGS IN THOUSANDS OF NET TONS 260 240 220 UNFILLED ORDERS 200 180 160 140 120 JOO SHIPMENTS 60 60

Malleable Iron Castings

Thousands of Net Tons

	Shij 1952	oments 1951	Unfill Order 1952	
Jan.	 87.0	92.5	203	234
Feb.	 82.9	89.0	193.1	255
Mar.	 81.0	101.7	196.9	267
Apr.	 89.3	97.3	198.2	276
May	 81.8	100.8	180.4	275
June	 	93.7		256
July	 	76.8		263
Aug.	 	90.7		249
Sept.	 	82.3		245
Oct.	 	93.9		238
Nov.	 	88 .2		221
Dec.	 	76.0		215
Total	 	1,082.9		

^{*} For sale, U. S. Bureau of the Census.

Steel Forgings

1951

Thousands of

1952 271* 277*

266*

263*

Feb. Mar.

Apr. May

June July

Aug.

Shipments

Tons

1952

1.360*

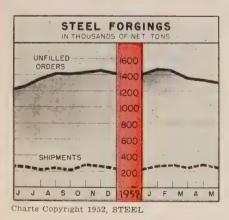
1,319*

Backlogs

709 781

1,208

1.436



U. S. Bureau of the Census. * Data for these months based on reports from commercial and captive forge plants with monthly shipments of 50 tons or more. Previous data based on reports from commercial forge shops producing 3600 tons or more per year.

Issue Dates on other FACTS and FIGURES Published by STEEL

companies must get a steady flow of steel from now on and no allotment cutbacks in the fourth quarter. Also, companies changing over to radically new models this fall must use a minimum amount of downtime if this goal is to be reached.

Right now, the steel shortage is trimming automotive operations to a mere token output. U. S. and Canadian plants produced only 22,615 autos and trucks in the week ended Aug. 2, compared with 42,514 units in the previous week. In the week ended Aug. 4, 1951, combined U. S. and Canadian autotruck production reached 117,010 autos and trucks.

Private Building Skids . . .

Construction activity continued its boom in July by reaching a record total of \$3.1 billion in outlays—3 per cent above May and 7 per cent above outlays during June, 1951, says the Commerce Department. When higher prices for labor and materials are considered physical volume of new construction is running at about the same rate as a year ago.

An indication that the end of the boom may be at hand is that civilian building is now falling considerably. Industrial construction and private housing awards were under the average 1952 week by 28 and 14 per cent, respectively, in the week ended July 31, says Engi neering News-Record. Another ind dication that contractors may soon find idle time is seen in ships ments of fabricated structura: The American Institute of Steel Construction reports that only 125,486 tons of structural steel were shipped in June. This compares with 244,222 tons in Mag and 257,066 tons shipped in June last year.

Store Sales Cool . . .

Retailers are discovering that the hot weather and the steel strike are keeping customers awa from their doors. Departmen store sales across the nation slumped 2 per cent under the year ago showing, when sales slumped per cent below the same week, 1950. Considerable provement occurred in citie most affected by the steel strik

BAROMETERS OF BUSINESS	LATEST PERIOD*	PRIOR WEEK	YEAR AGO
INDUSTRY			
Steel Ingot Output (per cent of capacity)2	47.0	15.5	102.0
Electric Power Distributed (million kwhr)	$7,150^{1}$	7,328	7,003
Bituminous Coal Output (daily av.—1000 tons).	1,116	1,095	1,691
Petroleum Production (daily av.—1000 bbl)	$6,100^{1}$	6,071	6,231
Construction Volume (ENR—millions)	\$1,131.6	\$278.2	\$267.6
Automobile, Truck Output (Ward's—units)	22,615	42,514	117,010
TRADE			
Freight Car Loadings (unit—1000 cars)	620 ¹	607	813
Business Failures (Dun & Bradstreet, number)	152	137	171
Currency in Circulation (millions) ³	\$28,952	\$28,884	\$27,842
Dept. Store Sales (changes from year ago)3	-2%	+1%	-14%
FINANCE			
Bank Clearings (Dun & Bradstreet, millions)	\$15,906	\$16,378	\$14,657
Federal Gross Debt (billions)	\$263.0	\$263.0	\$255.6
Bond Volume, NYSE (millions) Stocks Sales, NYSE (thousands of shares).	\$14.7	\$13.8	\$11.3
Loans and Investments (billions) ⁴	5,552 \$76.2	5,120 \$76.6	8,538 \$70.1
United States Gov't, Obligations Held (billions)4	\$33.3	\$33.4	\$30.9
carted beates dove. Obligations Held (billions)	φυυ.υ	დაა. 1	დას.შ
PRICES			
STEEL's Weighted Finished Steel Price Index ⁵	171.92	171.92	171.92
STEEL'S Nonferrous Metal Price Index6	224.6	224.6	225.1
All Commodities ⁷	111.5	111.2	115.0
All Commodities Other Than Farm and Foods7	112.4	112.0	116.6
*Dates on request, *Preliminary, *Weekly capacities, ne 2,077,040, *Federal Reserve Board, *Member banks, Federal			

2.077.040. Federal Reserve Board. Member banks, Federal Reserve Syste 100. 61936-1939=100. Bureau of Labor Statistics Index, 1947-1949=100.

Although sales of household goods were continuing at low levels, substantial improvement occurred in sales of air conditioners, home freezers and television sets.

Car Loadings Remain Low ...

As a reflection in the drop in steel and iron ore output, freight car loadings totaled only 607,271 cars in the week ended July 26, reports the Association of American Railroads. Ore loading amounted to 12,268 cars or 80,828 cars below last year while coke loading totaled 4,134 cars, a decline of 13,126 cars under the year-ago loadings. Miscellaneous freight that week totaled 302,983 cars, a drop of 75,350 cars below rail shipments in the same week, 1951.

Strike Losses Soar . . .

Work stoppages in June resulted in 14 million man-days idleness, the highest level in any month since October, 1949, reports the Bureau of Labor Statistics. The steel strike accounted for 80 per cent of the June total.

About 1 million workers were idled by strikes in June, but only 170,000 of those were involved in strikes starting that month, says the bureau, which places the start of the steel walkout in April. A

total of 425 stoppages began in June, compared with 475 in May and 396 in June, 1951. Approximately 650 strikes were in effect during the month, including those started in earlier months.

The bureau says that seven large stoppages, affecting 10,000 or more workers, caused 85 per cent of the total idleness in June. Four of these began in earlier months. In addition to the steel dispute, these stoppages include one in the Pacific Northwest lumber industry and construction strikes in Detroit and California. The three stoppages started in June included a strike at Republic Aviation Corp. in Farmdale, N. Y.; a construction strike at the Paducah, Ky. project of the Atomic Energy Commission; and a strike by employees of carpet and rug manufacturers in Massachusetts and New York.

Trends Fore and Aft ...

New business charters totalled 7835 in June, the lowest monthly total since February. . Loans to metalworking companies declined \$18 million in the week ended July 23 . . . Bank clearings in the week ended July 30 rose 8 per cent above a year ago . . . Factory sales of mechanical stokers in June rose 46 per cent over May.



Countless small parts usually made by conventional turning processes — by stamping, drawing, casting or molding—can be made better...stronger...cheaper by cold-heading and roll threading.

Machining of Cold-Headed Parts is hardly ever necessary because shank and head dimensions can be held to very close tolerances. Rolled threads are produced to American Standard dimensions.

Here are just a few of the many parts formed or roll threaded ...

Screws Plastic Inserts Stems
Bolts Thumb Screws Arms
Studs Wing Nuts Plugs
Rivets Small Gears Prongs
Rods Tongue—Clevis Points
Links Segments

Single or multiple secondary operations can be performed on cold-headed parts to produce special characteristics required to fit the part for its particular application. These secondary operations include drilling, tapping, milling, shaving, flattening, notching, flanging, trimming, serrating, bending, off-setting, slotting, fluting, swaging, knurling, pointing, heat treating, plating and finishing.



Write or call in a Pheoll engineer. Explain your production problems. He will tell you where you can save money, speed production, improve your product appearance.



August 11, 1952



Whirlpool "TUMBLES" COST 37%

. . . on Clothes Dryer Burner Assembly!

How Whirlpool Corporation, St. Joseph, Mich., found Twin Type Speed Nuts savings of 37%... reduced Materials Handling 75%

Whirlpool engineers have matched the smartly styled beauty of this automatic clothes dryer with smartly engineered, cost-saving fastening methods! In the complete dryer assembly, they have specified more than 40 SPEED NUTS of various types! Their latest find is a neat 37% production savings through the use of Twin Type SPEED NUTS in attaching the burner assembly to the base plate, eliminating two threaded nuts and two lockwashers for an amazing 75% cut in materials handling!

No matter what you build or assemble, whether

you're in the design stages or in full production. there's a SPEED NUT way to solve your fastening problems! The TINNERMAN representative in your area will quickly supply detailed information on our FREE Fastening Analysis Service for your products. Call him soon! Meantime, write for your copy of "SPEED NUT Savings Stories", a booklet showing many typical TINNERMAN cost-saving solutions to a wide variety of fastening problems in industry. TINNERMAN PRODUCTS, INC., Dept. 12, Box 6688, Cleveland 1, Ohio. In Canada: Dominion Fasteners Ltd., Hamilton. In Great Britain: Simmonds Aerocessories, Ltd., Treforest, Wales, In France: Aerocessoires Simmonds, S. A.— 7 rue Henri Barbusse, Levallois (Seine) France.



Men of Industry



LAWRENCE LITCHFIELD JR.
. . . heads Alcoa subsidiaries



A. CALLAWAY ALLEN
. . . Wagner division sales manager



JOHN W. QUEEN
... Ryerson's Cleveland plant mgr.

Lawrence Litchfield Jr. was elected president, Alcoa Mining Co., New York, and of Surinaamsche Bauxite Maatschappij, Paramaribo, Dutch Guiana, both subsidiaries of Aluminum Co. of America. He succeeds Frank B. Cuff, retired. He has been serving as vice president of both subsidiary companies.

Harris-Seybold Co., Cleveland, elected George C. Houck vice president for operations, W. Ray Spiller vice president for engineering, and Ren R. Perry vice president for sales.

General of the Army Douglas Mac-Arthur was elected chairman of Remington Rand Inc., New York. James H. Rand, who has been serving as chairman, remains president.

Sharon Tube Co., Sharon, Pa., elected Hugh B. Scott chairman of the board, J. J. Friedman president, R. W. Brown vice president and treasurer, I. M. Yanowitz vice president-sales, and C. A. Spencer controller and secretary.

Richard H. Diesel was promoted to general manager, Canadian division, Yale & Towne Mfg. Co. He has been director of purchasing of the Stamford, Conn., division and takes up his new duties starting Sept. 1.

A. Callaway Allen was appointed sales manager, electrical division, of Wagner Electric Corp., St. Louis, succeeding H. A. Hudson who was appointed sales analyst.

John J. Ellsworth, treasurer and director since 1943, was also elected vice president, United-Carr Fastener Corp., Cambridge, Mass. Samuel A. Groves was named general manager, eastern division, and continues as general sales manager and a vice president.

Robert A. Prinz, midwest district manager for Republic Foil & Metal Mills Inc., was named manager of the new product control department at the company's plant in Danbury, Conn. Howard E. Walters was made Chicago regional sales manager.

William F. Jones has just been named manager of sales, Chicago district office of United States Steel's National Tube Division. He succeeds the late J. S. Raymond in this position.

Raymond T. Whitzel was made general manager, smelting division, Aluminum Co. of America, Pittsburgh, succeeding V. C. Doerschuk who becomes technical consultant, chiefly on aluminum smelting and related problems.

John W. Queen was appointed manager of the Cleveland plant of Joseph T. Ryerson & Son Inc. Since 1947 he has been in Chicago as manager of the alloy steel division with responsibility for alloy steel sales at all Ryerson plants. He has been in Cleveland for the last two months assisting William O. Springer, plant manager since 1945. Mr. Springer will move east for special administrative duties while awaiting reassignment in the Ryerson organization.

John J. Nagle, president, Crown Cork & Steel Co., was named president, Crown Can Co., Philadelphia, a subsidiary. He succeeds Richard P. Swartz, resigned. Mr. Nagle also is chairman of the subsidiary. H. C. Hieser, vice president-operations, Crown Can has resigned.

Paul D. Oesterle was made sales manager, piping department, Dravo Corp.'s machinery division, Pittsburgh.

Robert A. Foley was transferred to the Chicago office, Hevi Duty Electric Co. He is replaced at the eastern district office in Jersey City, N. J., by Robert M. Palmer. George M. Brown was appointed Cleveland district manager. Elton E. Staples, vice president-sales, has moved his



J. W. ZINSS



ROBERT S. GRUVER
. . . Armco's V. P. of planning



JOHN H. PORTEUS . . . chief engineer of Luria Eng.

headquarters from Cleveland to the company's main office in Milwaukee.

Duraloy Co., Scottdale, Pa., appointed J. W. Zinss vice president in charge of operations.

Emil G. Best was appointed dryer product manager for Thor Corp., Chicago.

Frederick G. Rahe was appointed sales engineer, Butterfield Division, Union Twist Drill Co., Derby Line, Vt. He will have headquarters in New York, covering New Jersey and metropolitan New York areas.

Robert S. Gruver was elected vice president, Armco Steel Corp., Middletown, O., in charge of planning, a newly created office. He formerly was assistant vice president in charge of operations and since 1951 has also temporarily served as special assistant to the president for long range planning and co-ordination.

Wisconsin Metal Products Co., Racine Wis., elected James F. Howard president and a director. Mr. Howard was formerly vice-president and treasurer of Nesco, Inc.

Glendon P. Robb was recently appointed manager of sales, New York district office of National Tube Division, United States Steel Co.

John H. Porteus was appointed chief engineer, Luria Engineering Co. Until recently assistant chief design engineer in the machinery division of Dravo Corp., he now will make his headquarters at Luria's steel fabricating plant in Bethlehem, Pa.

John S. Jacox was appointed manager of purchasing for the Aviation Gas Turbine Division, Westinghouse Electric Co., at South Philadelphia, Pa. He will co-ordinate all purchasing activities for the division, including operations at its South Philadelphia plant, Kansas City plant, and a new facility now being erected at Columbus, O. Wilbur C. Wilson was named purchasing agent for the South Philadelphia plant, George A. Fadler for the Kansas City plant. At South Philadelphia, Donald R. Jenkins is

manager, gas turbine application engineering section, steam division. W. E. Benoit is manager, electronics division, Baltimore.

R. Mason Scheetz has been appointed district manager of sales for Columbia Steel & Shafting Co. and its Summerill Tubing Co. division in the Philadelphia-New York area.

Ansul Chemical Co., Marinette, Wis., has named Paul R. Larimer as general sales manager in charge of all four sales divisions, fire extinguisher, refrigeration, industrial chemicals and export.

W. J. Webb, division manager of Evinrude Motors, was elected a vice president of Outboard, Marine & Mfg. Co., Waukegan, Ill., parent organization.

Donald C. Steinhelber was elected secretary, Minneapolis-Moline Co., Minneapolis, succeeding the late W. C. Rich. K. N. Cervin will be assistant secretary.

Managership of the Chevrolet grey iron foundry in Saginaw, Mich., has changed hands with retirement of Carl C. Wood. His successor as plant manager is John F. Smith, former general superintendent.

C. C. Caudill was appointed assistant to the operating vice president Wheeling Steel Corp., Wheeling W. Va. He is succeeded by Alex Shearer as manager of production for the corporation.

A. E. Bottenfield, former vice president in charge of distributor sales of Whiting Corp., was elected a vice president, Waldie & Brigga Inc., Chicago advertising agency.

Sterling P. Abbey was appointed divisional sales manager responsibile for distributor sales of Lamson & Sessions Co. products in metropolitan New York. J. Wallaco Nall is in charge of the southern operations with headquarters in Birmingham.

Decentralization of General Electric Co.'s fractional horsepower motor department into four separate subdepartments, each with a general manager, is as follows: AC motors, Lisle D. Hodell; hermetic

the head with the extra sales appeal and extra production efficiency



Lamson + Sessions

MACHINE AND TAPPING SCREWS

Lamson Phillips Head Screws win hands down when it comes to good looks plus production efficiency.

If you are still using common slotted head screws for external assemblies better take a good look at the possibility of switching to Phillips Head. The savings, in terms of faster, more efficient assembly and better looks, can more than compensate for their slightly higher price.

> Right now Lamson & Sessions can offer you quick delivery on Phillips Head Machine and Tapping screws in most popular sizes. May we quote on your requirements?

The LAMSON & SESSIONS Co.

1971 West 85th St. . Cleveland 2, Ohio

Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

Check the products below that interest you; tear off bottom of ad and send to us for complete information.



MACHINE SCREWS Precision made for fast economical

assembly.



Pre-assembled lockwashers on tapping and ma-



TAPPING SCREWS

Choice of round, pan, truss, flat oval, hexagon and phillips heads.



CAP SCREWS

"1035" Hi-Tensile Heat-treated steel.



SQUARE AND HEX MACHINE SCREW NUTS

Semi-finished, hot pressed, cold punched.



LOCK NUTS

Economical, vibration proof. Can be used repeatedly.



COTTER PINS

Steel, brass, aluminum and stainless steel.



"1035" SET SCREWS

Cup point type, hardened and heat-treated.



ALLISON R. MAXWELL JR.
... V. P.-sales, Pittsburgh Steel

motors, Ab Martin; specialty motors, Jack J. Clarkson; and electric sink and laundry motors, Carl W. Moeller. Headquarters for all four groups will be at Ft. Wayne, Ind.

Pittsburgh Steel Co., Pittsburgh, has elected Allison R. Maxwell, Jr. vice president, sales and Marvin J. Bair general manager of sales. Norman J. Froelich, assistant general manager of sales, is now also in charge of the sale of rods, manufacturers wire, merchant products and chain link fence. John C. Cercone has been named assistant general manager of sales in charge of sheets and semi-finished products.



CHARLES L. FICKER
... U. S. Steel Division V. P.

Harley F. Byrne has been named sales manager of Artisan Metal Works Co., Cleveland. Formerly he was administrative engineer at Pesco Products Co., Cleveland.

Cecil J. Schanz was appointed chief engineer of methods and standards for all plants of Nesco Inc., Milwaukee.

Charles P. Evans, formerly assistant plant manager at Noblesville, Ind., for Firestone Tire & Rubber Co., was appointed works manager of the Downey, Calif., plant of Arrowhead Rubber Co., a subsidiary of National Motor Bearing Co. Inc., Redwood City, Calif.



HORACE D. MOULTON
. . . U. S. Steel asst. V. P.-raw materials

Horace D. Moulton was appointed assistant vice president of raw materials, United States Steel Co., Pittsburgh. He is succeeded by Charles L. Ficker as vice president-operations of U. S. Steel Division, New York.

George H. Baldwin was promoted to assistant general sales manager, Bridgeport Brass Co., Bridgeport, Conn. He is succeeded as sales manager, mill products, by Richard L. Allen.

Walter S. Schamel was appointed district manager of the Los Angeles office, American Wheelabrator & Equipment Corp.

OBITUARIES...

Wallace T. Montague, vice president, Norton Co., Worcester, Mass., died July 30 of a heart attack. He was also a member of the board of Grinding Wheel Institute.

Paul W. Seiler, 63, died July 29. Since 1947 Mr. Seiler had been president of Seiler & Co., Highland Park, Mich., manufacturers' agents.

Earl Ewing Norman, 69, founder of Automatic Screw Machine Products Co., Chicago, died August 3.

Gerard M. Haley, 43, director of purchases, Chevrolet Motor Division, General Motors Corp., Detroit, was drowned Aug. 3 when his boat upset in Torch Lake, Mich. He had been director of purchases since October, 1949.

Thomas Cruthers, vice president of Worthington Corp., Harrison, N. J. since 1936, died July 27. He joined the organization in 1907.

Alfred C. Meneely, 60, president and treasurer of Meneely Brass & Bronze Co. and of Meneeley & Co., bell foundry, Watervliet, N. Y., died July 30.

Sir William Thomas Griffiths, 57, vice president of the Inter-

national Nickel Co. of Canada Ltd. from 1945 to 1950, died July 31. During these same years he was also chairman and managing director of the Mond Nickel Co. Ltd., Great Britain.

Charles C. Carr, who retired in 1949 as director of public relations and advertising, Aluminum Co. of America, Pittsburgh, died July 29.

Louis M. Fuller, 70, president of American Abrasive Co., Westfield, Mass., and prominent industrialist, died Aug. 4 in Boston.

Martin P. Ostergard, 62, president, White Tool & Supply Co., Cleve-land, died July 28.



How to put a squeeze on your molding costs

Osborn representative is a specialist on cutting molding costs. He devotes all his time... all his skill to analyzing foundry operations like yours. He will show you how to simplify molding jobs, eliminate heavy manual effort and boost your foundry efficiency.

In the foundry shown, Osborn Jolt Squeeze Strippers are turning out uniformly accurate molds at high production rates hour after hour, day after day. Such accuracy and dependability are no accident, but a direct result of Osborn's advanced molding machine designs, combined with quality materials manufactured and assembled to machine-tool precision.

Have Osborn survey your foundry operations now. From a complete line of molding machines and core blowers, your Osborn Molding Analyst can recommend the most efficient equipment to handle your needs. Many Osborn machines are equipped with mechanical devices to eliminate fatigue... many have automatic controls to produce molds or cores on pre-set time cycles to increase output and cut molding costs. Call or write The Osborn Manufacturing Company, Dept. 805, 5401 Hamilton Avenue, Cleveland 14, Ohio.

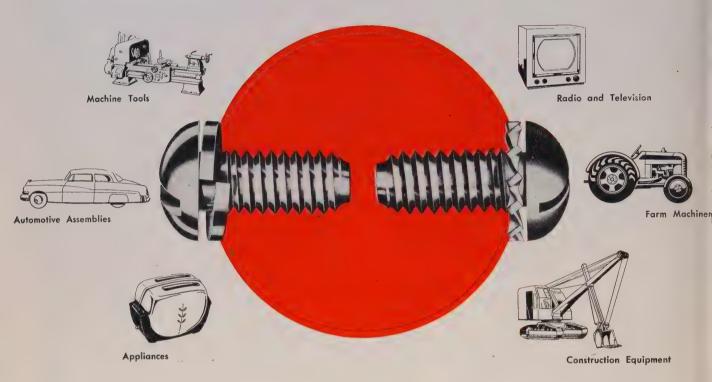
Serving the Foundry Industry for Over 60 Years

Osborn Molding Machines

MOLDING MACHINES...CORE BLOWERS...INDUSTRIAL BRUSHES

August 11, 1952 81

Reduce production cost



in ALL fields of manufacturing

with EATON SPRINGTITES & SEMS!

WHEREVER YOU use bolted assemblies, there are economies to be gained through the use of EATON Springtites and Sems. Under actual production line conditions, these top-quality bolts or thread-cutting screws that are pre-assembled with Reliance Spring lock washers or multitooth washers cut assembly operations from 8 to 3 motions. Reduce production costs and improve product quality. One item, instead of two, cuts paper work and balances inventory

Why not gain these savings in your own assembly operations? Engineering data and samples furnished upon request.



For the Finest—Specify EATON SPRINGTITES and SEMS

MANUFACTURING COMPANY, RELIANCE DIVISION

OFFICE AND PLANTS . MASSILLON, OHIO SALES OFFICES: NEW YORK . CLEVELAND . DETROIT . CHICAGO . ST. LOUIS SAN FRANCISCO . MONTREAL

Production - Engineering

SMOKELESS—ALMOST—The nine open hearth furnaces now being built at U. S. Steel's Fairless plant at Morrisville, Pa., by Koppers Co., will be equipped so smoke from the stacks will be almost entirely eliminated. Fairly eating up the smoke will be a pair of electrostatic precipitators installed at each furnace. These are being installed as integral parts of the open hearth structure, and are located immediately beside, and in a line parallel to the furnaces, in the system of flues between the furnaces and their stacks. Twin arrangement makes possible the by-passing of one of a pair for maintenance. The precipitators, it is estimated, will remove more than 95 per cent of the dust normally in the open hearth exhausts.

HEAVY PLATE BENT IN MINUTES—The new vertical press and horizontal draw bench built and installed in Babcock & Wilcox Co.'s Barberton, O. plant, as part of its \$30 million expansion program, produce a rough hollow forging up to 35 inches outside diameter with 4½-inch walls in a matter of minutes. The press bends heavy plate for boiler drums—plate much thicker than ever bent before—and clso pierces ingots which are transferred to the draw bench to be formed into hollow forgings for boiler headers and other special parts. The equipment brings to America for the first time a method of manufacturing these forgings in larger and heavier sizes which is faster, more flexible and uses less steel.

CHECK YOUR HEAT TREATING-If you are a builder of welded stainless steel equipment, it is important, during the present material shortages, to review established methods of heat treating and stress relieving stainless. Heat treated unstabilized stainless steels often can replace the more critical stabilized stainless steels. Stanley C. Orr, chief metallurgist of the Elyria, O., division of Pfaudler Co. says carbide precipitation during the welding of unstabilized stainless causes a decrease in chemical resistivity in the heat affected zone. Columbium and titanium stabilized stainless are commonly used to overcome this deficiency. Proper heat treatment, however, can restore the chemical resistivity of fabricated equipment to a degree equivalent or superior to that obtained with the critical stabilized materials.

stainless steel developed by Armco, now being used in structural members for the fuselage surrounding the jet engine in the Sabre jet includes characteristics surpassing any other stainless steel. Tests of the material, according to the producer, show that at normal temperature strength-weight ratios of the metal, referred to as 17-7 PH, are superior in some instances to recently introduced nonferrous light metals. At elevated temperatures, Armco says, the

superiority is even more marked. The steel responds well to intricate drawing, forming and other fabricating operations, and is readily welded. It also can be heat treated to develop high strength after being worked.

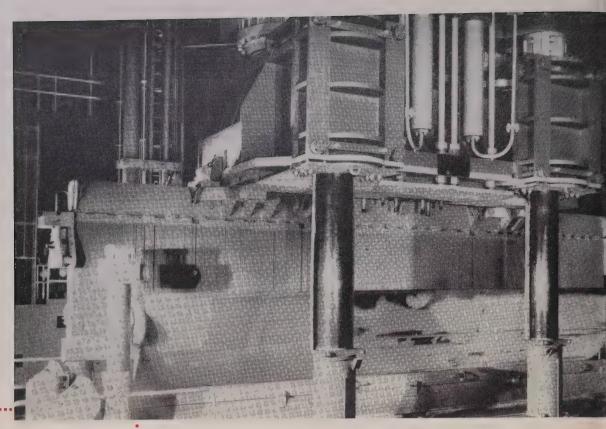
LESS NICKEL FOR CASTINGS?—If the current research on the development of heat-resistant a'lcys for castings continues favorable, more nickel will be freed for higher temperature metals. At present the work sponsored by Alloy Casting Institute at Battelle Memorial Institute is being concentrated on the development of cast alloys for use in the intermediate temperature zone, the 900 to 1400° F service. The alloy selected by the metallurgists as the most likely to have the needed strength and corrosion resistance contains from 18 to 23 per cent chromium, and 8 to 12 per cent nickel. The research tecm is investigating a series of 14 compositions within this range (referred to as HF) to determine which offers the best mechanical properties at elevated temperatures.

ISOTOPES IN INDUSTRY—What's the story on isotopes for inspection purposes? How successful are they? Here's what Linde found out in using cobalt 60 for nondestructive testing weldments: A 200-millicurie source in the form of the radioactive isotope cobalt 60 costs less. It is more powerful, extremely portable and its life span is relatively long for practical use. Technique employed by Linde is effective; it includes precise exposure calculations, and safe operator procedure.

"FANCY" TOOLS PRACTICAL—Chromium plating aircraft tools—not for looks but for economy—is overcoming a problem that baffled Lockheed Aircraft Corp., Burbank, Calif., production engineers for years. Thousands of dollars annually will be saved by chrome-plating spinning chucks to extend their life 300 per cent. Made of hardened metal to withstand jars and jolts encountered during spinning, spinning chucks normally have a short life due to brittleness. Lockheed now uses steel that is toughened rather than hardened. The reason: Tough metal retains elasticity; it also is easily machined. The "cushioning" provided by the metal plus the smoother finish obtained through chrome-plating add up to longer chuck life.

scales "UNDER PRESSURE"—Keeping pace with industry's increasing demands for accurate measuring devices, Bureau of Standards, is extending its temperature standardization toward the extremes of the temperature scale. New instruments and methods of calibration are under development for these regions. Research efforts are directed toward the extension of the international temperature scale to provide greater accuracy and reproducibility in the measurements thus made possible. p. 90

83



MORE POWER FOR INDUSTRY

Heaviest plate ever rolled is formed here into a boiler drum section in the Barberton, O., works of Babcock & Wilcox Co. The plate was produced by Lukens Steel Co.

Thicker Boiler Plate Formed Faster

Boiler drums are built with fewer operations. New vertical press and horizontal draw bench produce rough hollow forging up to 35 inches OD with $4\frac{1}{2}$ -inch walls

HEAVY PRESS equipment for shaping boiler drum plate, and a method of forming heavy wall forgings by piercing and drawing an ingot at Babcock & Wilcox Co.'s Barberton, O., plant soon may benefit the nation's entire metalworking industry.

They will be instrumental in supplying the industry with more electrical power with very little increase in costs by:

Providing the electrical industry with more powerful boilers to produce more steam for the power.

Enabling the boilers to be built faster, holding down costs through

fewer manufacturing operations.

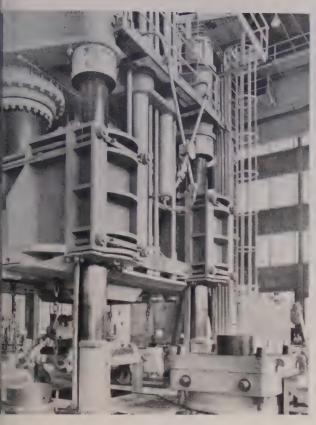
The new vertical press and horizontal draw bench, built and installed by the company as part of its nation-wide \$30-million expansion program, produce a rough hollow forging up to 35 inches outside diameter with $4\frac{1}{2}$ -inch walls in a matter of minutes.

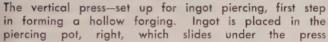
Much Thicker Plates Bent—Among the various types of work done on the multipurpose equipment are the forming and fabricating of two vital types of boiler parts. The press bends heavy plate for boiler drums—plate much thicker than ever bent before, and

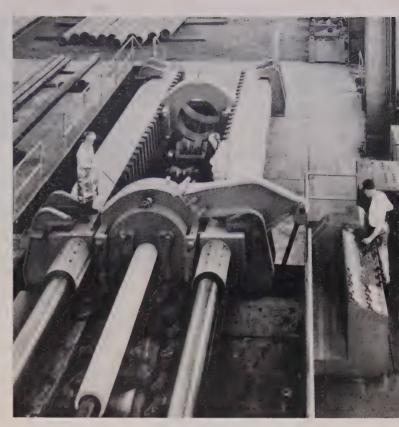
also pierces ingots which are transferred to the draw bench to be formed into hollow forgings for boiler headers and other parts.

Usually, boiler drums for highduty central station units are fabricated by welding together a number of sections formed from heavy plate, number of sections having a direct influence on the time and cost of fabricating the drum.

The new Barberton press is capable of bending plate up to 42 feet long. As it takes about as long to bend a 10-foot section as a 422 foot length, the savings in forming







The horizontal draw bench—in action drawing a hollow Forging, foreground, is forced by mandrel through series of ring dies to produce desired diameters

a drum 84-feet long from two 42foot sections are obvious. thermore, with 42-foot sections only three circumferential welds are necessary to form a complete drum as against 10 when 10-foot sections are employed. The procedure also results in substantial economies in x-raying the welds to prove their soundness.

Less Steel Used-The same increasing demand for steam to produce power more efficiently has also resulted in a growing need for seamless, heavy-walled hollow forgings for use in making boiler headers and connecting steam lines. The new equipment, B & W says, brings to America for the first time a method of manufacturing these forgings in larger and heavier sizes which is faster, more flexible and uses less steel.

Until now, such hollow sections could be made only by the costly and time-consuming process of forging large solid ingots, then boring out the centers. With the new B & W equipment, heated ingots can be removed from the furnace, pierced by the hydraulic

press, and drawn through a series of ring dies over a mandrel on the draw bench to form a rough hollow forging in a few minutes.

Seamless hollow forgings can be produced by the new equipment from a minimum of 8 inches inside diameter and 3/4-inch wall thickness up to maximum inside diameter of 26 inches and a wall thickness of 41/2 inches in lengths up to 22 feet.

Ingot Weight the Factor—The maximum weight of the cropped ingot which the equipment can handle — 26,000 pounds — controls the maximum final size of the forging which may be 14 to 15 feet in length for heavy wall thickness and large diameters, and up to 22 feet for lighter wall forgings.

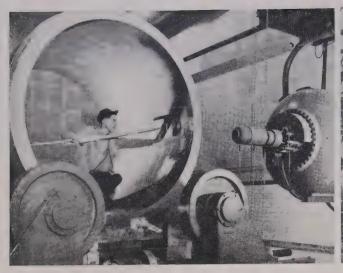
As the special tooling for this process can be changed quickly, it is possible to produce one or two lengths of a particular size or of a specially desired specification of steel at very little unit cost per forging for the change-over. Both allov and carbon steels can be successfully used in the process.

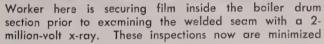
Besides piercing ingots and

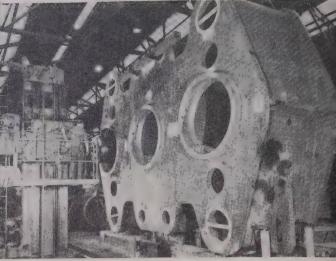
forming heavy drum plate, the large vertical press can be readily converted to form heavy pressure vessel heads, warped sections and other general-purpose press work. Special operations such as upsetting, reducing, expanding and cold drawing also can be performed on the equipment when required.

Heated Before Shaping-A special furnace, measuring 14 x 50 feet and about 7 feet high, is used in the Barberton plant to heat heavy drum plate as well as ingots for forging before shaping them. An additional furnace for reheating hollow forgings is in process of installation. Work has also begun on a self-contained melting shop including a new arc furnace to insure an adequate supply of the special analysis ingots required for this operation.

A touch of a pushbutton controls the movement of a heavy steel plate on the giant press. The plate to be bent is carried on a bending beam that slides under the press when the button is touched. The beam is the backbone of the four manipulators—large hooklike







Too large to ship out for finishing, this 200 ton platen for the vertical press was set on edge before an 8-inch spindle horizontal boring mill specially set up for the job

parts, two on each side—which lift and turn the plate with finger-like delicacy, although each has an uplift of 35 tons.

Easy on Operators—Four control boards, one near each manipulator, make it easy for the operator to work at either end and watch the movements of the plate being bent. Each of the boards can control its own manipulator or any of the other three.

At each end of the beam there is also a master panel that controls the four manipulators and the in-and-out movements of the beam. A touch of the hand control lever can force a 6500-ton pressure on the steel plate, putting into action the hydropneumatic pressure system in another building.

The draw bench has one control panel. This directs the varied movements of its parts, and by remote control, draws on the hydropneumatic pressure system. Switches raise and lower, individually, each of the rollers that support the forging as it moves toward the die. A series of dials indicate the adjustment of the forging which must lie in a perfectly straight line.

The Press—Built practically in its entirety in the Barberton shops, the vertical hydraulic press has a normal operation capacity of 6500 tons or an intensified capacity of 8500 tons. It is equipped with massive bending beams 42 feet long and its open ended design makes it possible to bend even longer plates.

The four supporting columns of the press are giant steel pillars 52 feet high 26 inches diameter, each weighing 41 tons. The largest of the three press platens weighs 200 tons. Located on the press center and in the pit below the bottom platen is a 500-ton ram with a 54-inch stroke. This is provided to pierce the manhole in the drum heads.

The matrix used for piercing is fitted with an ejector ram with an 8-foot 6-inch stroke actuated by a 11½-inch bore cylinder. functioning as a piercing press, the heated billet is loaded into the matrix and the stripping plate installed while the matrix is positioned on a shifting table 14 feet from the center of the press. The loaded matrix is then moved into work position by the shifting table. Subsequent to the press piercing cycle, the shifting table returns the matrix to its former position where the ejection cylinder functions to unload the workpiece.

Shifted to Rear—When the press is utilized for forming drum-shell plates, the piercing matrix is moved by the shifting table to a position at the rear of the work area of the press.

This leaves an unobstructed space between press columns for the entry of the hydraulically operated plate manipulator which moves the workpiece from its loading position to its work position under the moving platen. This plate manipulator, which comprises the 42-foot lower bending beam.

also forms the carriage for cross-travel through the press. It also houses the 16-inch bore hydraulic cylinder which actuates the 52-foot stroke ram that moves the carriage.

The procedure for forming plates is to cold press in their entirety plates up to about 2¾ inches in thickness. Heavier plates are first rough formed while at forging temperature, then finished formed after they have cooled to room temperature. The same set of dies are used for both cold and hot forming.

The Draw Bench—The horizontal bench has a 1200-ton rating. Its return stroke is operated at 600 tons and pressures of either 600 or 1200 tons can be selected for the forward stroke which is 30 feet in length.

The die bed is 31 feet 6 inchess long with location for die holders along 28 feet of its length. The unit is equipped with swivel type die holders and seven roller supports. The roller supports, which position the mandrel and workpiece, are hydraulically operated with a 25-inch adjustment. The roller supports, which are actually small hydraulic presses, are also pushbutton operated and can be shifted lengthwise along the draw bench as required.

The hydropneumatic pressure system, for operating the press and also the draw bench, is powered by three triple-piston, single stage pumps, each geared to a 500-hp 2300-v synchronous motor

Each pump has a delivery rate of 234 gpm at 3000 pounds pressure.

B & W's chief interest in its new method of producing hollow forgings s to increase and improve the production of efficient steam for power.

As many as 30 headers may be required in the water walls, economizers and superheaters of a modern central station boiler. The continuing trends in boiler design require that these headers be able to withstand higher steam temperatures and pressures.

Auto Parts Made Faster

Inclined cleated conveyor belts keep parts flowing between various press operations

MATERIALS handling is a big factor in high volume production. At Toledo Stamping & Mfg. Co., it's the largest single factor why the company turns out automotive rocker arms and rocker shaft brackets at the rate of 1150 pieces per hour on each of its twin-press

No Manpower Used—Here's how the company does it: It uses portable conveyors, called Press-Tenders to elevate and convey parts to the next operation. On each of the inclined presses, finished parts ejected by air or mechanical means, slide down a metal chute to the portable conveyor which conveys them upward toward the next press. Parts then fall into another metal chute that leads to the loading point convenient to the next operator.

Besides increasing production about 10 per cent, the betweenoperation handling method saves loor space, keeps materials off the loor.

Secret: Cleated Belts—The portable conveyors, essentially small eleated conveyor belts, self-powered and readily adjustable to various loading and unloading heights, were designed for the setup by E. W. Buschman Co., the makers, with the aid of Frank D. Lake Co., Toledo materials handling irm.

The conveyors used at Toledo Stamping are 8 feet 6 inches long, and are driven 72 feet per minute. They have a minimum loading neight of 8 inches and maximum inloading height of 85 inches.

Control System

Eliminates Human Error

New device powered by tiny radioactive particle detects variations in weight of rubber coating applied to v-belts. Unit calculates proper correction and makes adjustments

HUMAN ERROR in production measurements and controls is a thing of the past at Gates Rubber Co., Denver, Colo. A new control system that regulates continuous sheet production on the company's v-belt and tire making lines actuates machine adjustments and charts a continuous record of the whole process at the same time.

What makes it work? Nuclear equipment developed by Industrial Nucleonics Corp., Columbus, O. The new device detects variations in the weight of the rubber coating given cord and fabric before these variations have a chance to affect quality.

Checks and Corrects — Powered by a radioactive particle no larger than a grain of sand, the unit detects any variation, calculates proper correction, makes the adjustment and records it.

The installation is the first successful effort so far to control automatically, the uniformity of the rubber-coated cord or fabric going into tires, v-belts and other products made at the plant.

Meets Metal Needs — Announcement of the new control system follows a successful trial operation of the system in recent months.

According to Wilbert E. Chope, president of Industrial Nucleonics, similar systems can be installed advantageously in coating and metals rolling industries, and his company already is working with representatives of those industries in preparing further installations.

Gages and Records — "Trigger" of the Gates electronic control system, the AccuRay, uses beta ray beams from a small capsule of strontium 90, an atomic by-product, to measure within one one-hundredth of a pound the amount



Automatic system powered by radioactive isotope controls rubber thickness applied to v-belts at Gates Rubber

of rubber coating being applied to each square yard of fabric. Mounted on opposite sides of the sheet in pairs, the gages provide simultaneous readings of both sheet edges.

Readings are indicated by continuous lines on recorder charts in the recording console units of the gages. Each chart includes lines indicating narrow tolerance limits. When the indicator approaches either limit line, it actuates the electronic control system which adjusts the huge calendering machine, keeping the rubber coating weight within ideal limits.

AEC Lets Navy Power Contract

Work on a nuclear power plant for propelling large naval vessels is being started by Westinghouse Electric Corp. under contract with the Atomic Energy Commission.

Development activity on the project will be centered at the Bettis plant, near Pittsburgh. This site houses the firm's Atomic Power Division.

ISOTOPES AID WELD INSPECTION

Technique employed for harnessing energy of cobalt 60 in nondestructive testing is effective; it includes precise exposure calculations, safe operator procedure. Costs are lower

FOR TEN years the Tonawanda, N. Y., plant of Linde Air Products Co. used either radium or radon gas—a decomposition product of radium—as the source of gamma radiation for radiographic inspection of welds, forgings and castings.

But early last year, the plant bought, with the approval of the Atomic Energy Commission, a 200-millicurie source in the form of the radioactive isotope cobalt 60, to be used in this method of nondestructive testing.

Since it began to use the isotope, here's what Linde discovered:

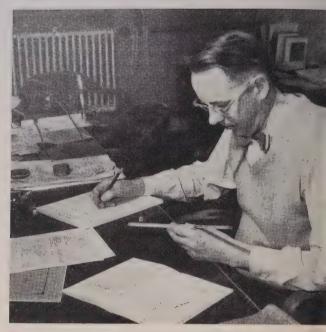
- ▲ Cobalt 60 costs less.
- ▲ It is more powerful.
- ▲ It is extremely portable.

▲ Its life span is relatively long for practical use. Cost of cobalt 60 is \$200 compared to several thousands of dollars for either an x-ray of comparable energy, or a radium capsule of equivalent strength. Effective life of the isotope (half life) is 5.3 years, which is not as good as the 1700 years of radium, but is superior to radon gas which has a half life of only 3.5 days.

Here's the procedure Linde employs to inspect a $2\frac{1}{2}$ -inch thick girth weld in a pressure vessel.



AT THE side of work, operator arranges exposure holders loaded with film, over girth weld in preparation for making radiographic exposure. In meantime, isotope remains in shielded container...



RADIOGRAPHIC inspection involving the radioactive isotope at Linde's Tonawanda plant begins with the technician. He calculates exposure time for 2½-inch thick weld, in this case, involving cobalt 60 . . .



AFTER the exposure holders are in proper position operator takes the cobalt 60 with him to top of a pressure vessel; lowers it into the vessel until it react level of the girth weld . . .



AFTER calculating from a formula that considers exposure factor, source strength, distance between source and radiograph film, technician uses a meter to check radiation level around storage vault . . .



FOLLOWING exposure, operator develops film, takes it to technician who is shown here interpreting finished radiograph. Weld appears as a light band in the center; defects appear dark, their shapes defined . . .



3 IF RADIATION is at safe level, an operator removes isotope from lead vault, transfers it to portable container to carry it to the work. Operator stands at safe distance to avoid upward radiation . . .



BACK again in the technician's office, the operator has his pocket ionization chamber checked. The chamber indicates the quantity of radiation to which the person who carries it has been exposed

August 11, 1952

Temperature Standardization:

Big Gains in Research

Using the demands of industry as a guide to work on temperature, its standards and its measurement, researchers are concentrating on the scale extremes

KEEPING pace with industry's increasing finicky demands for accurate measuring devices, the National Bureau of Standards is extending its temperature standardization toward the extremes of the temperature scale.

New instruments and methods of calibration are under development for these regions. Research efforts are directed toward the extension of the international temperature scale to provide greater accuracy and reproducibility in the meaurements thus made possible.

Interest In Extremes—Accurate measurement of temperature has long been of interest to the research scientist. Its importance, particularly at the extreme ends of the scale, has greatly increased with the rapid technical developments in recent years.

Improvements in processes for the production of steel, glass, gasoline and other important commodities have resulted from the increased precision that is being attained in the measurement and control of temperature.

Field of aeronautics poses new temperature problems in connection with the use of jet propulsion and the operation of aircraft at high altitudes and in polar regions. To attain the desired performance in jet engines, fundamental research is required to develop methods of measuring temperatures of flames and to develop temperatures ensitive devices for indicating performance and controlling operation.

Atomic Heat—Also, as a result of the applications of atomic energy, it has become necessary to learn more about the heat-transfer properties of materials at increasingly high temperatures. For effective research in these fields, temperatures must be accurately measured, and the results of one

laboratory must be comparable with those of another.

Scale introduced in 1927 prove useful in providing a stable, uniform and precise basis for obtaining temperatures. However in th 20 years following its adoption the increasing precision attained in temperature measurements mad it apparent that some revision was desirable in order to make the scal more self-consistent. This led to adoption of a new scale in 1948.

New scale uses the same fixed points as the old one, that is the boiling point of oxygen, boiling and freezing points of water, boiling point of sulphur and so on.

Only modifications are the reevaluation of the value of the silver point and a new value for use i the formula for calculating temperatures above the gold point.

Other Jobs—In addition to main taining the standard scale, NB calibrates the three standard in



Calibration of optical pyrometers by comparison with a standard pyrometer (right). Both instruments are sighted on a ribbon filament lamp that can be seen in the background, which serves as a constant-temperature source



Determining ice point of liquidiglass thermometer. Point is used check bulb's volume changes with the

By R. E. WILSON
Chief, Temperature Measurements Section
National Bureau of Standards
Washington

struments — platinum resistance thermometers, platinum - platinum rhodium thermocouples and optical pyrometers and certifies them for other laboratories throughout the country.

Until recently standard platinum resistance thermometers were calibrated singly at the sulphur point using apparatus open to atmospheric pressure. However, as a result of NBS research the use of pressure control has now been extended to measurements of the sulphur point.

Problem and Answer—Previously, variations in atmospheric pressure had been both troublesome and a source of uncertainty in the measurements. Most of the determinations were being made at night because pressure variations are smaller during that period. The new method uses a closed aluminum boiler having wells for ten thermometers and connected to the precision manometer. This apparatus will make possible a study of the sulphur point as a precise fixed point for thermometry.

The bureau is now working to obtain closest possible agreement between the thermodynamic and the international temperature scale. To aid in this work a noise thermometer developed at the University of Chicago has been set up to measure thermodynamic temperatures. The mean-square voltage due to thermal fluctuations in electron density in a resistor referred to as thermal noise—is a function of the thermodynamic temperature of the resistor.

By comparing the noise voltages across two resistors at different temperatures it is possible to determine ratio of the temperatures of the resistors. First measurements



Experimental high-temperature calibration of a thermocouple in the laboratory. An optical pyrometer is used to determine temperature of the hot junction which is contained in a graphite crucible within a radio-frequency heating coil. The cold junction is kept in an ice bath within the dewar

will be made of the temperature of the gold point, which is important both for the thermocouple and optical-pyrometer ranges of the scale.

New Instruments—Closely related to the work on the temperature scale is the development of improved temperature-measuring instruments. Thus, in connection with the maintenance and improvement of the international temperature scale in the temperature range from 630.5 to 1063°C, investigations have been made to determine the effect of annealing on the electromotive force of standard platinum versus platinum-rhodium thermocouples.

This study included a determination of the effects of different annealing temperatures, cooling rates and atmospheres in which the thermocouples were cooled. It was found that some of the electrical properties depend on the rate of cooling and that not only chemical purity but also mechanical strains must be controlled for maximum uniformity.

Seek Substitute—A search is now under way for a better material to substitute for the alumel wire of a chromel-alumel thermocouple. When used under conditions encountered in exhaust gases in aircraft engines the alumel becomes

brittle and fails after a relatively short period of operation. Available substitutes for alumel which appear likely to withstand the vibration and corrosive atmosphere are being investigated to determine their performance under these extreme conditions.

Future plans call for the construction of comparator furnaces to study the performance of standard platinum resistance thermometers and thermocouples between calibration points. As the international temperature scale is based on a relatively small number of fixed points it is necessary to investigate the standard temperature-measuring instruments between these points and to evaluate the precision with which they can be used over the intervening ranges. In this way the bureau hopes to insure that standard calibrated instruments of a given type indicate the same temperature at any temperature within their range.

Stands Up Under Stress — A significant advance in the measurement of extremely high temperatures was the recent development of an iridium—iridium rhodium thermocouple. Because of the high temperatures—up to about 3800° F which prevail in the primary burning zones of turbojet and ramjet

August 11, 1952

combustion chambers, conventional temperature - sensing instruments are not suitable for use in these applications. In preliminary studies, the new thermocouple has been found to withstand both the thermal and mechanical stresses incident to combustion chamber operation, and heat-resistant supporting tubes and insulators are now being developed so that the device can be used in flight.

At very low temperatures NBS research on thermometry has two major objectives: The determination of thermodynamic temperatures by means of a gas thermometer; and development of convenient, sensitive and reproducible secondary thermometer which can be calibrated by means of the gas thermometer.

Since the development of a highly accurate gas thermometer for this purpose requires painstaking and time-consuming precision, the work on the secondary thermometer is being pursued concurrently. Resistance thermometers constructed of the semiconducting elements, silicon and germanium, have proved to be extremely sensitive. In some cases the resistance changes more than 50 per cent per degree. While satisfactory reproducibility still remains a problem, results of initial tests have been quite promising.

Larger Stack Valve Designed

New ¾-inch multiple-section stack valve has been developed by Hydraulic Division, Sundstrand Machine Tool Co., Rockford, Ill. The firm reports the new unit is designed to supplement its ½-inch valve, in use for several years by makers of road machinery, ditching and excavating tools, industrial tractors and other types of mobile equipment.

As with the ½-inch valve, the new larger unit is made for series operation, permitting any number of devices to be actuated simultaneously under full or varying load—provided total load does not exceed relief valve setting. To illustrate, the firm cites grader operation, where it is possible to lift both ends of the blade simultaneously. This would permit continuous, instead of intermittent, performance.



Water-borne sand fill pouring through a pipeline from the surface into mined-out stope. Result is an even firm flooring which needs no leveling

Water-Borne Sand Makes Mine Floors

Mine tailing sand waste from ore concentrating proces proves useful when flushed back into the ground. It stabilizes mined-out areas previously filled with rock

NEW TWIST on the old idea of making the waste of a process useful is now helping a mining company save time in filling mined-out sections. Sand recovered from mill tailing, the waste in the ore concentrating process, is mixed with water and flushed through pipelines back into the ground at the Frood-Stobie and Creighton mines of International Nickel Co. of Canada Ltd., in Ontario.

Sand is used as fill for minedout stopes—sections of the mines from which the ore has been removed—or to stabilize areas previously filled with rock.

Fills Faster—For 20 years waste rock has been used at Frood-Stobie to fill the mined-out areas. Recently it was found that sand constituted a more suitable fill, permitting faster and more efficient underground operations. Now it is piped into the mine at the rate of more than 3000 tons a day.

Water-borne sand filters and packs into the rock-filled areas

and solidifies them so that the are not only self-supporting but also strong enough to sustain in creased weight as remaining pillar of ore are removed during the secondary stage of mining.

More than 3,500,000 tons of san fill will be required to stabilize at the rock-filled areas of the Froot Stobie mine alone.

On Square-Set Stope—Sand also being used as fill instead rock in current square-set stopmining at the two mines. A Creighton it is pumped directly underground to the deepest levels. Frood-Stobie it is shipped from the Copper Cliff smelter to the mining railway cars. Longest distance and is piped at Creighton is 95% feet, more than half of it on the horizontal.

Sand for Frood-Stobie, after ling dewatered at the Copper Ci concentrator and shipped to the mine is dumped into bins at a social plant and then mixed with water to a consistency of about



OME OF THE HUNDREDS OF DIFFERENT OPERATIONS YOU CAN DO WITH THIS UNIT AND ITS ACCESSORIES . . .

Clean Out Slots smooth Up Crowns Clean Out Corners Remove Saw Burrs Remove Parting Lines lemove Tapping Burrs Chamfer Corners lemove Machine Tool Marks

Remove Flash in Corners Remove Drilling Burrs Remove Flash Between Bosses Round Off Corners Grind Off Excess Stock Round Off Slots Remove Pits Clean Up Pieces Polish

Remove Fins Remove Nibs Grind Edges to Smooth Curves Remove Milling Burrs Remove Deep Scratches Remove Grinding Lines **Break Corners** Remove Surface **Imperfections**

The DELTA Belt Grinding Machine

- 1. Contact wheel gives longer belt life-eliminates bother of "set-up wheels" and dressing of "grinding wheels."
- 2. Inexpensive, long-wearing abrasive belts remove metal faster, are easily replaceable, save time, labor, and materials.

With this efficient belt grinding, polishing and deburring machine you can handle a multitude of metalremoval operations that originally required heavy, expensive machinery, or slow, costly manual methods.

It is compactly designed, ruggedly built, occupies minimum floor space and is easily portable. Lubricated-for-life, double-sealed, preloaded ball bearings, precision bored seats, precision ground shafts, dynamically balanced arbor pulleys, and Delta quality construction assure long, trouble-free service.

Priced much lower than any comparable machine, the Delta Belt Grinder will pay for itself in almost any manufacturing operation. Why not investigate it—and start enjoying added profits—today!



It's easy to grind hard-to-reach surfaces. Here, the operator presses against abrasive belt, directly over contact wheel, to clean up "inside" surface.



Operated in horizontal position, there's a steady, flat working surface especially suitable for easy, accurate finishing of relatively large surfaces.



With machine in vertical position, work can be held against any part of the abrasive belt in any position required by finishing operation.

There's a Detta Power Tool for Your Job-

WOOD OR METAL WORKING

3 MACHINES . 246 MODELS . MORE THAN 1300 ACCESSORIES

DELTA POWER TOOLS Another Product



or Delta Dealers, see your Classified Phone Directory under "Tools"

DELTA POWER TOOL DIVISION MANUFACTURING COMPANY

638H NORTH LEXINGTON AVENUE . PITTSBURGH 8, PA.

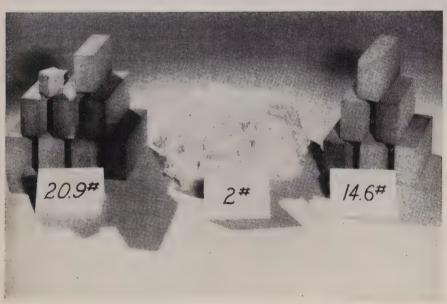
August 11, 1952

60 per cent solid. The pulp is drawn into a distributor box with connections to three 6-inch rubber-lined lines that enter the mine through a service raise extending from 3100 level to surface. On each level of the mine are distribution lines extending into the stopes.

Burlap Barrier — Section to be sand-filled is bratticed off and enclosed with burlap. Water decants through slots in the bratticing which are sealed one by one to prevent the sand escaping as the level

of the fill rises. The sand settles naturally and no hand-leveling is necessary to provide a smooth surface on which to start the next round of mining, which can proceed shortly after the fill is poured. Sand-fill water drains into the level ditches and is pumped back to surface.

Independent telephone system provides direct communication between working places underground and the plant at surface for control of sand delivery.



Two pounds of the fluffy white material packed to a 6-pound per cubic foot density fill the same volume as 14.6 pounds of high grade refractory insulating brick and furnish insulating efficiency of 20.9 pounds

Lofty Temperatures Held in Check

Refractory fiber developed by Carborundum doesn't lose its properties at 2300°F and will not soften at temperatures approaching 3000°F

SUBJECTING a molten stream of aluminum oxide, silica and certain modifying agents to a controlled blast of air produces a ceramic fiber that promises to solve many critical industrial and defense insulation problems. Developed by Carborundum Co., Niagara Falls, N. Y., the material is trademarked Fiberfrax. It resists temperatures that melt cast iron, yet its fineness is such that it can be used as a superfilter, as a base for entirely new types of insulation and fire-proof and electrical papers.

The refractory fiber can be used immediately in combination with,

or as a replacement for, asbestos in many applications. Asbestos, known for its resistance to heat and its electrical qualities, is largely imported and is critical in a number of defense applications. Fiberfrax possesses heat resistance beyond that of asbestos. Properties are retained at temperatures up to 2300°F and the material does not soften at temperatures approaching 3000°F.

Only the Beginning—At the present time the material is finding applications as high temperature insulation in combustion and exhaust systems of jet engines. It

can be bonded into insulating pa els that will not only resist fi and prevent heat loss but will al deaden sound. As a filter, the m terial improves efficiency of gand fume filtration.

Studies of potential use indicated it may be suitable for heavy due brake linings, as the strength supplying component in formed plast laminates like radomes and bod armor, in high temperature gaskeing, for vibration dampening areas a flame filter to remove ashing gas turbines. In many applications its weight of only 2 pound per cubic foot is expected to provadvantageous.

More Coming—Pilot production equipment at Carborundum can produce the material at the ration of 30 tons per month. Because of its newness, exhaustive tests have not been completed. Special testing procedures had to be devised its some cases since the fiber does nalways fit into test methods developed for less versatile material. The company is proceeding with \$500,000 expansion program to make the fiber in greater quantitat lower unit cost.

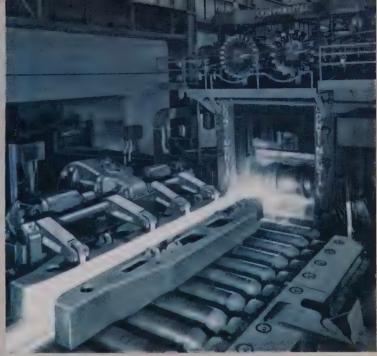
Fibers range up to 3 inches : length and have an average thickness of 4 microns (0.00004-inch) Although produced and collected a fluffy mass, the material event ally will be processed into felt blankets, firmly bonded batts, taken and paperlike forms.

Keen Observation—Research gineers came upon the matern during their early work on alumit bubbles which are used extensive as insulation in high temperature commercial applications. The but bles are made by blasting molti alumina with air. During this eration, it was noted that occasid ally fibers were formed. By won ing with alumina and silica, devi oping modifying agents and by tensive experimentation with tea peratures and air blast pressure the researchers were able to can the blowing process beyond bubble stage and in effect bli each bubble into a fine fiber.

Basically the product is a vittous ceramic rather than cryst-line. Relatively rapid cooling from the melt provides the fibers will a smooth vitreous surface, lell length and may account for the resilience.



Ingot Buggy



High Lift Blooming-Slabbing Mill



Bloom and Slab Shear



Magazine Slab Pilers

Complete Rolling Mill Installations

SLABBING MILLS UNIVERSAL MILLS PLATE MILLS HOT STRIP MILLS COLD STRIP MILLS TEMPER MILLS

Mills complete with **Auxiliary Equipment**

ROLL LATHES

SPECIAL MACHINERY

BLOOMING MILLS STRUCTURAL MILLS RAIL MILLS BILLET MILLS ROD MILLS MERCHANT MILLS

CHICAGO · PITTSBURGH

CASTINGS—carbon and alloy steel from 20 to 250,000 pounds

Rolls-iron, alloy iron and steel rolls for all types of rolling mills





Plants at: East Chicago, Ind. • Wheeling, W. Va. • Pittsburgh, Pa.



New key to Western progress

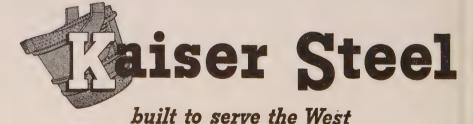
Production of Wide Flange Beams by Kaiser Steel—the first produced west of the Mississippi—is a new key factor in the expansion of western industry.

For western construction men now have a *dependable*, *nearby* source of supply for this vital structural shape.

Larger in sectional area than other beams of a similar type, Kaiser Steel Wide Flange sections offer a bonus in extra strength.

The addition of Wide Flange sections to the standard shapes produced by Kaiser Steel is more evidence that....

It's good business to do business with



PROMPT, DEPENDABLE DELIVERY AT COMPETITIVE PRICES • plates • continuous weld pipe • electric weld pipe • hot rolled strip • hot rolled shed alloy bars • carbon bars • structural shapes • cold rolled strip • special bar sections • semi-finished steels • pig iron • coke oven by-production for details and specifications, write: KAISER STEEL CORPORATION, LOS ANGELES, OAKLAND, SEATTLE, PORTLAND, HOUSTON, TULSA, NEW YOR

Better Coating for Moly

NBS says chromium-frit combination cuts rapid oxidation in jet engine use

POSSIBILITIES for using molybdenum's 4750°F melting point to advantage in jet aircraft engines are nullified without adequate protection from rapid oxidation.

To gain effective coatings for this metal, National Bureau of Standards conducted a study employing chromium and frit as the protective elements. Results indicate, says NBS, that such coatings extend greatly the useful high temperature life of molybdenum, offering better protection than either chromium or ceramics alone.

The present NBS study is one phase of a continuing program for development of ceramic coatings for metals and alloys. The investigation was conducted by associates of the bureau's enameled metals laboratory, under sponsorship of the National Advisory Committee for Aeronautics. Several other NACA-sponsored coating formulations are in regular commercial production.

Practices Adopted—Description of the work shows that various chromium-frit coatings were bonded to molybdenum specimens, then subjected to oxidation tests under tension in the range 1500° to 1800°F and to flame tests at 2000° to 3000°F. Coated specimens lasted 1000 to 3000 hours at the 1500-1800°F range. At 2800°F, with no applied load, protection for as much as 7 hours was attained—or enough, says NBS, to be useful in some applications.

Tracing the practices adopted, the bureau says moly specimens were first coated with one of several powdered chromium-bearing base coats. In some cases, these also contained some frit. After firing the base coat in either a hydrogen or argon atmosphere, a ceramic seal coat containing no chromium was applied to several specimens.

Most Durable—Results indicate that the most durable coatings were achieved by application of a glass-free chromium base coat, followed by a glass seal coat. Finally, an even higher durability was gained after addition of a third

coat, this of lower melting glass.

Microscopic investigation of sections shows chromium of the base coat has a somewhat porous structure, formed by the diffusion-welding of chrome particles to each other and to the molybdenum base. Glass is subsequently absorbed into this structure during firing of the seal coat.

Although thermal strain and rapid creep tend to cause cracked coatings, adherence is excellent and the glassy layer works to reseal the fissures. Thus, cracking does not result in rapid failure.

Drilling Handbook Revised

"Drills and Drilling Practice" is the comprehensive 62-page revised edition of National Automatic Tool Co.'s drilling handbook. Indexed for quick reference, it includes complete information on drills and drilling all kinds of material. The edition is complete with diagrams, engineering tables and formulas.



CONTINUOUS PORCELAIN ENAMELING FURNACE
. . . shows primary benefit in absence of handling marks

Furnace Fuses Pipe Inside, Outside Simultaneously

CONTINUOUS porcelain enamel fusing furnace has been developed by Barrows Porcelain Enamel Co., Cincinnati, for use in its plant operations.

The furnace was designed and built by Barrows to fuse both inside and outside of different pipe sizes simultaneously. The firm reports one advantage is improved quality of work, but adds the primary benefit is elimination of handling marks on the pipe.

Uniform Coating—Pipes are first coated with a liquid porcelain enamel or slip. After being dried and placed on rollers adjacent to the furnace, they are advanced and rotated at a uniform rate. Rollers are set at an angle to the direction of travel. The slow, continuous movement of pipes gives enamel sufficient time to fuse and form a

uniform coating of porcelain.

Five different standard 21-foot pipe lengths, up to a 2½-inch OD, can be run through the gas-fired furnace at the same time. The furnace, with handling coils, is 30 feet long and takes about 1800 lineal feet of pipe per shift.

Glassy Surface—An additional unit, not seen above, spot heats the pipe for welding.

Because the pipe is corrosion resistant and provides a smooth, glassy surface, it is being used in installations that require handling corrosive and extremely hot liquids and gases or in locations subject to corrosive fumes. As a result of its use in one application, (STEEL, July 7, 1952—p. 98) the firm reports about 2 million pounds of black steel pipe has been saved over an 18-month period.

WET DUST RECOVERY:

Big Tonnage Returns

By MARTIN L. COVER

Consultant

Allen Park, Mich.

Wet dust from blast furnaces is recovered in the form of sludge, made into filter cake and recharged as sinter. Layout for wet flue dust recovery plant is simplified

FILTER cake, if properly handled, can be a distinct asset to the sintering process, and its recovery may be a virtual "gold mine" so far as waste prevention is concerned. On an iron unit basis, the recovery of "wet dust" may run from a minimum of the equivalent of 40 tons of ore per 1000 tons of pig iron produced, to 100 tons or more, depending on how the blast furnaces are working.

As neither the catcher dust nor the dust recovered from the washer water can be used raw in the furnaces, some means of agglomeration becomes necessary. Since 10 per cent or more of the iron units in the furnace charge may appear as flue dust, the recovery and handling of this dust becomes of extreme importance.

Only about 80 to 90 tons of catcher dust can be sintered per day on each wind box. Adding whirler dust or dried out washer dust will reduce the amount of dust that can be sintered. The resulting sinter usually is glazed and brittle. Dry dust, unless it is pugged at the furnaces, is extremely difficult to handle and may result in a serious hazard to smooth

and safe sinter plant operation and produces a poor grade of sinter.

If filter cake containing about 27 to 30 per cent moisture is added to the mix, up to 200 tons per wind box, and properly handled, it can be sintered and resulting sinter will be compact, porous, unglazed, without honey combing and of a comparatively high structural strength. No attempt should be made to recover more dust dry than is accomplished by the ordinary dry dust catcher.

Product Must Be Hot - When handling a high percentage of filter cake in the sinter mix, the returns must be hot and must constitute around 25 per cent or more of the total mix. The plant must be engineered so that the temperature of the returns, as well as the amount, can be controlled. returns must be fed on the belt going direct to the pug mill, by a rotary table feeder. The belt should have a speed of not over 100 fpm. All materials used, including the returns must be pan weighed and recorded hourly. The carbon can be controlled by the returns and by added ore. The moisture can be entirely controlled by the temperature and amount of the returnines.

If possible, the filter cake show be put onto the belt just ahead of the returns. A trough in the materials stream should be made for the returns. This will prevent be burning. Belt scrapers and juntion boxes must be carefully designed. An even flow of the calis necessary.

The materials in the mix should be pugged only once. With 27 to 30 per cent moisture in the cake it will be made into small pelle in the pug mill with a high moiture content. The hot returns will dry their surface. The pellets contain enough carbon for self-sintening.

With a side delivery swinging spout properly engineered, the will roll down towards the gratuand maintain the moisture in the part of the bed, so that the rate travel of the sintering zone will main high. The pellets and the high temperature of the mix, defining the side of t

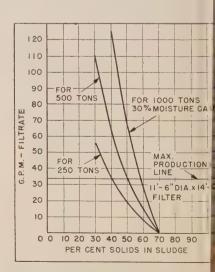


Fig. 2—Chart shows output of file cake for various percentages of so

(1+a) = SP. GR. INLET WATER

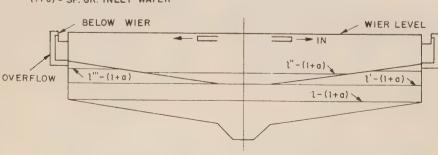


Fig. 1—Diagram of a 2-tray settler



ENGINEERING INTEGRITY

For almost half a century the McKee name has been recognized by steel men throughout the world as a symbol of engineering integrity.

They know McKee as a source of sound, practical engineering for every type of iron and steel producing facilities from ore to finished steel.

They know McKee as the recognized leader in engineering and construction of plants for sintering and ore preparation—the development of

new sintering and ore preparation practices—and the design of sintering machines and equipment for modern ore preparation.

They know McKee as an organization with the scope and resources, the experience and technical ability to undertake any blast furnace, steel plant or raw materials treating project and carry it through to completion with efficiency and integrity.

DESIGN, ENGINEERING AND CONSTRUCTION FOR THE IRON AND STEEL AND PETROLEUM REFINING INDUSTRIES



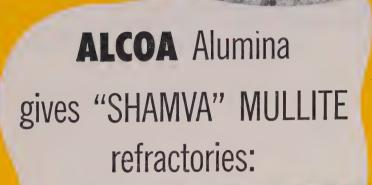
Arthur G. McKee & Company • Established 1905

Headquarters: McKee Building, 2300 Chester Avenue, Cleveland 1, Ohio.

New York Office: 30 Rockefeller Plaza, New York 20, N.Y. • Washington Office:

1507 M Street, N. W. Washington, D. C. • England: The Iron and Steel Division of Arthur G. McKee & Company is represented by Head, Wrightson & Company, Ltd.

District Engineering Offices: Union, New Jersey and Tulsa, Oklahoma.



GREATER load bearing strength

LESS re-heat shrinkage

HIGHER refractoriness

To give these three qualities to their products, the Mullite Refractories Company, Shelton, Connecticut, adds ALCOA Alumina to their mix. Now, Mullite super-refractories come in three grades, containing 62%, 67% and 72% alumina respectively.

This company reports the average service life of alumina refractories at more than double that of ordinary grades and in specific applications more than 6 times. Before the addition of ALCOA Alumina, brick deterioration began after 40-60 heats. Now Mullite refractories will withstand 270-285 heats before evidence of breakdown.

This is an outstanding testimonial to the value of ALCOA Alumina as a *life-giving* constituent of refractory brick. Down-time is considerably reduced, saving untold dollars in production loss as well as labor and material costs to rebuild. Moreover, alumina refractories, by keeping furnaces in continuous operation *longer*, give increased tonnages and more uniform operating conditions.

If high-temperature operations have you stymied, investigate alumina super-refractories. We will be glad to refer you to reliable sources of supply. Write to:

ALUMINUM COMPANY OF AMERICA, CHEMICALS DIVISION 622-H Gulf Building, Pittsburgh 19, Pa.



Alcoa Chemicals



ALUMINAS and **FLUORIDES**

ACTIVATED ALUMINAS - CALCIMED ALUMINAS - HYDRATED ALUMINAS - TABULAR ALUMINAS - LOW SODA ALUMINAS ALUMINUM FLUORIDE - SODIUM FLUORIDE - SODIUM ACID FLUORIDE - FLUORORIC ACID - CRYOLIFE - GALLIUM

"SEE IT NOW" with Edward R. Murrow returns August 31, 6:30 P.M., E.D.S.T.



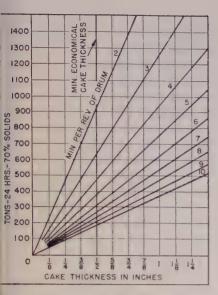


Fig. 3—Production of 30 per cent moisture cake for various thicknesses and minutes per drum revolution

porous and the sintering rate comparatively high. The design of the swinging spout is extremely important.

Ignition should preferably be made by the open-type burner. Any detrimental effects of high carbon in the mix can be controlled to a certain extent by water sprays over the bed following ignition.

Washer water, and perhaps precipitator water, only should be put into the washer water sewer. Means should be provided to prevent large pieces of coke and other foreign matter from entering the sewer. Screens should be used if necessary. The sewer should be egg-shaped and continuous.

Pumps Are Protected - The water should be pumped to the settlers by rubber-lined pumps with bearings protected by sealing water. Hydraulic couplings should be used so that the motors can be started without load and so that the pumping rate can be controlled. To avoid flooding hazards, all electrical equipment should be at or above ground level. number of spares should be held to a minimum and all pumps, including the spares, should be operated together. This prevents pumping trouble due to segregated materials. If the sump becomes dangerously low, all pumps should be automatically shut down and an alarm should be sounded.

Automatic sump drains, rather

than sump pumps, should be used to avoid high maintenance and operating difficulties due to grit in the sump water. Check valves and full opening stop valves should be used in the pump discharge lines. Check valves should be counterweighted so that they will close with the discharge pressure when a pump is suddenly shut down. This will avoid serious water hammer difficulties.

The line carrying the water to the settlers should have a constant slope towards the settlers and if the settler end is submerged, a vent should be placed at the high point to act as a syphon breaker. The size of this line should be such that the maximum velocity of the water flow will be not over 4 or 5 fps. This will greatly reduce the power required to operate the pumps and will increase their capacity.

Screens Are Employed — The water should be received at the settlers in water boxes equipped with ½-inch screens that can be readily cleaned. The box should be large enough to handle all the water when one of the settlers is closed down. The water should be distributed to the settlers through pipe lines containing a full opening stop valve.

The water should be carried down into the settlers and discharged with a low velocity at, or a little below, the point where the specific gravity of the water in the settler is the same as that of the incoming water. The active zone of the settler is above this level and the thickening zone is below the level. Every means possible should be used to prevent any disturbing action on the water in the Upward velocities settling zone. cannot be avoided, but these velocities are so low that their disturbing action is not great. Swirling of the entering water should be avoided and sweeps should be kept as low as possible.

Overflow is not of as much importance. A 2-tray settler, where the overflow is over a weir that is nearly continuous around the periphery of the top tray of the settler and where the overflow from the bottom tray is at the quarter points, shows practically no difference in the grains per gal-

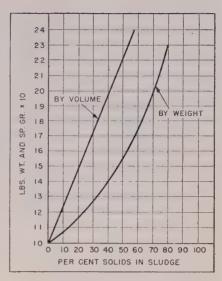


Fig. 4—The per cent solids in sludge by weight and volume as well as the specific gravity of the sludges

lon in the effluent from the settler trays.

To avoid a lot of grief in washing out the settlers, the bottom of the settler cone should be above ground level or, at least, above the level of the sewer. The sewer should be egg-shaped and the continuous flow of the effluent to the sewer and in the sewer should not be interrupted by manholes or anything that causes swirling. Branches to the sewer from the settler should enter the sewer main at an angle of 45° and should never be brought in at a manhole. Sewers should be ample in size to take all the water from the washers and to rapidly empty at least one settler at the same time. Well designed sewers will avoid a lot of trouble later on.

How Sludge Is Removed-Thickened sludge should be removed from the bottom of the settler cone by a variable-speed centrifugal pump placed below the cone. Screens should not be used in its suction lines. The thickening sludge in a settler will spread in equal specific gravity levels across the entire area of the settler. If the sludge being pumped from the settler contains 60 per cent solids, then the specific gravity of the sludge at the bottom of the cone will be 1.75. The specific gravity at any level will vary from the 1.75 at the bottom of the cone to practically 1 at the overflow.

Contrary to the usual concep-

tion, the thickened sludge reaches the bottom of the cone by seeking specific gravity levels and not by being swept to the center of the cone. If solids have congealed to the point where they will not seek this level (somewhere between 1.75 and 2.00 specific gravity) either the sweeps will not move them into the center and they will harden under the sweeps and cause sweep trouble or they will be swept into the center and interrupt the steady flow of the sludge into the sludge pump suction. Getting this suction flow started again is, at times, a difficult operation. It may be necessary to take suction pipe down to remove congealed material.

Ordinarily this results in a bad mess on the tunnel floor particularly if the tunnel floor is below the sewer level. When the furnaces are not working normally and the settlers become overloaded, it is sometimes impossible to avoid this suction trouble. For this reason, the sweeps and their drives should be designed to meet this condition. Sweep shear pins should be avoided. By by-passing the inlet water to this particular settler, the per cent of solids in the sludge can be quickly lowered and the sweeps can be returned to normal without experiencing a washing out job on the settler. Besides being a disagreeable job. this washout may involve as long as two weeks continuous clean-up work and cost \$10,000 or more in labor and lost iron units.

The real function of the sweeps is to prevent congealing of the solids by keeping them stirred up to the point where they will not flow by gravity; they also assist in the segregation of the "sand" to the cone below the sweeps where hardens and causes sweep trouble. Even if the settling zone extends below the sweep level, the sweeps will prevent the final settling out of the fine material and by their disturbing action may greatly curtail the volume of the settling zone and cause an increase of the grains per gallon in the effluent.

Disadvantages of 2-Tray Unit— It is questionable whether the use of a 2-tray settler is ever justified for they are much harder to operate and maintain and a washout is much more difficult. If a settler is partly emptied and a sludge seal is allowed to remain in the sleeve that carries the thickened sludge from the top tray to the center cone of the bottom tray, and if the settler is then filled through both the bottom and the top inlets, the water will be trapped in the bottom tray when it is full and will flow through the overflow pipes to the sewer. The extra hydraulic head that results under the diaphragm will cause it to rupture. In a two unit 2-tray installation, both diaphragms were ruptured by this means. The supplier had not pointed this hazard out to the company,

80-foot diameter 2-tray The settlers handled 4500 gpm each to a clarity of 4 grains per gallon or less when the settlers were not However, when the overloaded. furnaces were making an unusually high amount of dust and the settlers were greatly overloaded, grains per gallon in the effluent ran as high as 196, while this settler was handling 4500 gpm. Had the steel diaphragm and the upper sweeps been left out and had the inlet water been brought down at the center to a point just above the lower sweeps, each settler would have handled 7000 gpm to around 4 grains per gallon under normal operations and the effect of overload conditions would have been greatly reduced. The operation and maintenance would have been greatly simplified.

A 2-tray settler is presented in Fig. 1. When the inlet water drops to the 1-level, there is practically no settling in the top tray. When the inlet water level drops to the 1'-level, there is reduced settling in the bottom tray and little settling in the top tray. When the inlet water is at the 1"'-level them all settling is in the top tray.

Effective Settling Zones-In Fig 1 the specific gravity of the inlet water is represented as (1+a). The entering water will seek the (1+a)level in the settler. Only the part of the settler above the (1+a)level is effective in settling and this only if it is undisturbed by sweeps, entering water or other means. This zone is designated as the settling zone. As the (1+a) level rises, the settling zone volume is reduced. When the settler is greatly overloaded and the (1+a) zone is near the weir level, little settling takes place. This was the case when the 2-tray settler noted above had a clarity of only 196 grains per gallon in the effluent Later this same settler handled

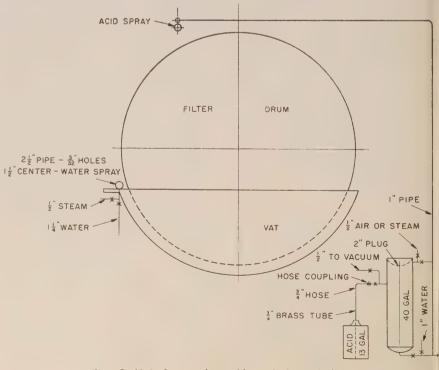


Fig. 5-Unit for washing filter cloth and drum



... SPECIFY STALWART RUBBER PARTS

From dog bones to hood grommets, STALWART produces rubber parts to withstand almost any abrasive force.

Maximum resistance to continual or intermittent wearing action can be built into the rubber parts required for your product.

STALWART can supply parts from stocks compounded specifically to combat other enemies of rubber... oil and gasoline, extreme temperatures, chemical action, weather. From more than 500 different stocks at their disposal, **STALWART** experts can specify the exact rubber compound which will serve best in a particular application.

Precision-fabricated parts can have varying degrees of hardness, tensile strength, and elongation to meet *individual*, S.A.E. or A.S.T.M. specifications.

Write today for illustrated catalog No. 51SR-1 for additional details.



610-SR

TALWART RUBBER COMPANY

200 NORTHFIELD ROAD

BEDFORD, OHIO

August 11, 1952

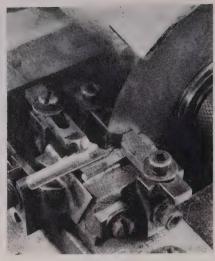
9000 gpm of washer water with a clarity of 8.1 grains per gallon.

Higher grains per gallon in the washer water tends to lower the (1+a) level, but it takes more time to settle the water clear and an overloaded condition is much more likely to exist. During a period when the grains per gallon in the inlet water was running well above 200, tests of the effluent over a period of about 22 months averaged 42.6 grains per gallon. Leaving the 196 test out, the average was still 12.18 and the lowest reading was 5.8 grains per gallon. Over a two year period, when the inlet contained less than 100 grains per gallon, the average test showed 3.76 with a minimum reading of 2.7 grains per gallon. Each settler was handling around 4500 gpm during each period.

A settler free of sweeps and with water brought in at a level a little below the (1+a) level in normal operation, eliminates disturbance in the settling zone thus increasing the relative volume of the settling zone. Tests over a three year period on a pilot settler of this type indicate that each would settle 4000 gpm to a clarity of around 4 grains per gallon. Its efficiency should be much greater during periods of high dust production on the blast furnaces. There would be no sand segregation or congealing trouble and no sweeps to fail.

Effects of high inlet solids would be much sooner noted and the operation adjusted to take care of the higher dust production. Sludge from this settler can flow direct to the filter and be controlled by a filter level control valve located in the sludge line. An automatic sludge conveyor or a centrifugal pump may be used to handle the sludge. Ordinarily, there would be no back pumping of sludge, but where sludge would be pumped back, it would be returned to the lower part of the settler cone at the level where the specific gravities are approximately equal. There would be no sand segregation with its inherent troubles. The flow of filter cake to the sinter mix could be kept much more uniform when this type settler is used.

Effect of Pumping Rate—In the usual sludge pumping setup, the sludge is pumped much faster than



Thinnest of All

Thinnest among all Norton grinding wheels is this 3½-inch diameter rubber bonded unit used to slit nibs of pen points. The wheel is 0.006-inch thick—about twice the width of a human hair. Abrasive used is regular Alundum, grit size 240, in work at Esterbrook Pen Co., Camden, N. J.

the filter can use it and the back pumping period may be as much as, or more than, twice the period of pumping into the filter. This sludge usually is introduced into the inlet stream of water to the settler. The slimes go immediately into thin solution. The segregated sand drops down to the bottom of the settler cone and, if the solids in the sludge are not high enough, the sand will form hard spots that will eventually cause sweep failure.

The amount of filter cake that a filter will produce is limited by the solids in the sludge and by the amount of water that a filter of a given size will handle. A filter $11\frac{1}{2}$ feet diameter by 14 feet long will handle a maximum of about 33 gpm of filtrate water. That amount is marked as the maximum production line for this size filter in Fig. 2.

With approximately 58 per cent solids, about 1000 tons of cake per day can be produced. With 50 per cent solids, about 500 tons can be made, whereas with 40 per cent solids only about 250 tons production is possible. To produce this amount, the filter must be kept open and the cloth clean. As the grooves under the cloth fill up with solids and the cloth blanks off, a

production as low as 300 tons, with solids at 60 per cent, may result due to the curtailed amount of filtrate water that will pass through the filter.

When the filter is built, car must be taken to see that it is ex actly round. Some turning of the stave wood may be necessary to assure perfect roundness. The screening wood should never be turned.

Regulation Is Recommended -The speed of the filter should be regulated to maintain a cake a least ½-inch thick. Congealed solids from any source should no be allowed to accumulate in the filter vat nor should the agitator be allowed to operate too rapidly The drive should be strong enough to assure agitator operation at al times, while there is sludge in the The sludge level should be maintained by a level control that is well designed. The level should be high enough to assure that all the pickup circumference of the drum will be covered. Sludge should not be allowed to flow our of the vat at the overflow. Wash ing of the vat should be limited to once per month.

A canvas cloth costs less, but its life will only average six of eight weeks continuous operation. It has a tendency to blank off it islands and the cake is not readily loosened at the blow off. Patching to increase the life of the cloth is not indicated economically.

A nylon cloth will last sig months or more, but it has a ten dency to stretch and fill the grooves and thus prevent free flow of the filtrate to the filtrate tank This, however, is not likely to oncur, unless the grooves are partly filled with congealed solids that have been pulled through the cloth or by calcium carbonate deposits il the grooves. With careful application of the cloth and periodit acid washing, the probable efficient life of the cloth could be extended beyond the six months' period. As with the canvas cloth, does not pay to try to get too muc life out of a nylon cloth.

An automatic filtrate removed instead of a centrifugal pump should be used to remove the filtrate from the filtrate tank.



DRAVO HEATERS OFFER YOU:

LOW INITIAL COST—Users report 30% to 60% savings over "wet-type" systems.

studies now!

EASY INSTALLATION-Need only fuel, exhaust and electrical connections . . . no ductwork.

LOW OPERATING COST-Direct-fired . . . burn gas or oil ... readily converted ... minimum efficiency 80%.

AUTOMATIC OPERATION—On-off or modulating controls ... no constant attention needed.

LONG SERVICE LIFE, LOW MAINTENANCE - Stainless steel combustion chamber eliminates refractory lining.

SAFETY—Approved by American Gas Association, listed by Underwriters' Laboratories, Inc.; Dravo standardized safety control circuit accepted by Factory Mutual Engineering Division.

MOBILITY—Can be moved to any location.

FLEXIBILITY—When floor space is limited, can be wall-hung or suspended from trusses in any position.

0

PITTSBURGH . ATLANTA . BOSTON . CHICAGO . CINCINNATI CLEVELAND . DETROIT . NEW YORK . ST. LOUIS . PHILADELPHIA WASHINGTON

Sales Representatives in Principal Cities

Manufactured and sold in Canada by Marine Industries, Ltd., Sorel, Quebec. Export Associates: Lynch, Wilde & Co., Washington 9, D.C. using Dravo Heaters. These case studies give you proof of Dravo Heater versatility, and they're yours for the asking.

DRAVO HEATERS SOLVE HEATING PROBLEMS IN THESE INSTALLATIONS, TOO:

- PROCESS DRYING AND HEAT CURING—where moisture content must be controlled or removed from air, and temperature regulated to meet production needs.
- HEATING AND VENTILATING STORES, SCHOOLS, AUDITORIUMS, AND LARGE BUILDING AREAS—where quick, automatically controlled, low-cost heating is desired.
- TEMPORARY HEATING—where comfort heat is necessary during building construction or to keep ground temperature above freezing in winter.

FOR FREE CASE STUDIES OF INTEREST TO YOU

MAIL THIS COUPON TODAY . . .

(Case Study sheets are $8\frac{1}{2}$ " x 11", punched for binder or convenient filing.)



Please send me the following case studio	es FREE:	
□ Process drying and heat curing	t curing	
□ Space heating large buildings		
☐ Tempering make-up air	Please have a representative call.	
Name	Title	
Company		
Address		



Save labor . . . speed up production with T-J Rivitors and Clinchors adaptable to a wide range of assembly jobs today . . . in aircraft, automotive, farm machinery, stampings of all kinds!

T-J Clinchors set clinch nuts 3 to 5 times faster! Fully automatic . . . controlled by a single foot pedal. Available in Underfeed and Gravity feed models, throat depths 8" to 36".

T-J Rivitors automatically feed and set solid rivets . . . with high production! Electrically-powered Rivitor sets $\frac{1}{16}$ to $\frac{1}{4}$ diam. solid steel rivets up to $\frac{1}{8}$ long. Air-powered Rivitor sets aluminum alloy rivets up to $\frac{1}{4}$ diam. or steel rivets

up to $\frac{1}{8}$ " diam. and up to $\frac{3}{4}$ " long. Throat depths 8" to 36"

Write for Clinchor bulletin 847; Rivitor bulletins 646 and 847. The Tomkins-Johnson Company,

Jackson, Mich.

T-J Rivitor used for automotive clutch plate assembly. Saves time and labor doing a four-fold job—assembling, setting, inspecting and ejecting.



Its Rating Goes Up -

GRAPHITE, principal ingredient of crucibles, is almost pure carbon and is one of the softest of substances in contrast to the diamond — which differs but little from it chemically, and is one of the hardest.

In addition, the material also is oily in character. This gives it that quality to remain isolated from the metals it contacts. It is constantly in demand for lead pencils, lubricants, paints, dynamo and motor brushes, resistance rods and foundry facings.

The high conductivity of graphite makes it indispensable to the electrical industry. But since 1940, a new use has been found for it. During the development of the atom bomb, according to Pennsylvania's Department of Labor and Industry, graphite was found to act as a "moderator" in retarding the action of neutrons of uranium. Now the material is a primary material in atomic research.

centrifugal pump used for this purpose is exceedingly difficult to maintain. A steady flow of cake to the sinter mix is not possible and frequent breaking down of the agitator usually results, because of filter cake dropping into the vat.

Fig. 3 shows the production of 30 per cent moisture filter cake for various cake thicknesses and minutes per drum revolution. The minutes per drum revolution. The minutes per drum revolution. The minutes per drum revolution. Running thicknesses of cake below this tend to blank the cloth off, and prevent an even delivery of the cake to the sinter mix.

The blow off should be set at about 5 pounds. This pressure can be produced by a reducing station or by a small auxiliary blower. In any case, a continuous pressure should be assured.

It is important that the scrapes be carefully engineered.

How Filter Is Controlled—Production of the filter can be controlled by throttling either the pickup or the drying valves and by the per cent of solids in the sludge but it is not advisable to add flushing water to the sludge as a means of production control.

Fig. 4 shows the per cent solid in the sludge by weight and by

AT E. C. ATKINS & CO.

A Lindberg Induction Heating
Unit brazes carbide tips
on circular saws



E. C. Atkins & Co., Indianapolis, Indiana, manufacturer of saws has joined the long list of companies

using Lindberg Induction Heating Equipment. Atkins uses a 5 KW unit plus a specially designed fixture to braze carbide tips on large circular saws.

This unit as well as many other Lindberg units in all sections of the country are piling up good production records.. because they are ruggedly engineered and built to minimize irritating breakdowns and expensive work stoppages.

These construction features tell an important part of the story:

Conditioned cooling . . Temperature controlled water cooling eliminates condensation on high voltage parts.

Checklites . . A system of indicating lamps instantly reveals any abnormal operating conditions . . simplifies servicing.

Work coil burn-out protection. An electrical interlock system makes it impossible to turn on power when cooling water is not flowing.

Long-life industrial tubes feature shortened internal structure.. Kovar metal-to-glass seals.. heavy walled anodes.

Sealed tank capacitors are hermetically sealed against dirt and dust . . require no servicing or refilling.

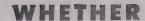
For your production brazing, soldering, hardening, annealing, stress relieving, hot forming, forging or shrink fitting requirements, investigate Lindberg Induction Heating Units. Ask for Bulletin 1440.

LINDBERG



HIGH FREQUENCY DIVISION

LINDBERG ENGINEERING COMPANY, 2441 West Hubbard Street, Chicago 12, Illinois



LIGHT or HEAVY STANDARD OF SPECIAL

BAKER) has the drill...

right for the job!

Regardless of the job requirement, Baker engineers have the know-how to provide drilling machines that will do the job better! Where production figures are of primary importance, Baker will greatly increase productivity . . . and for standard drills over inch and a half capacity . . . there's a Baker right for every job. Consult Baker for better drilling machines, no obligation...and there is a qualified Baker Sales and Service Representative nearby who is eager to give you prompt and efficient service.

BAKER BROTHERS, INC. Toledo, Ohio DRILLING ... TAPPING ... KEYSEATING and CONTOUR GRINDING MACHINES volume as well as the specific gravity of the sludges. A container, that holds exactly 10 pounds of clear water is used. The weight in pounds of the sludge divided by 10 is the specific gravity of the sludge.

Figs. 2 to 4 provide a quick and easy means for checking the production and the operating condition of the filter. Assuming 30 per cent moisture in the cake, a 1-inch cake with four minutes drum speed should produce about 940 tons of cake per day. With about 58 per cent solids in this sludge, the filtrate tank should dump 10 times per hour.

For cloth washing, water warmed to around 150° should be used. For washing the drum, pure steam and cold water should be alternated. The water spray pipe should be installed so that it may be turned through an angle that will allow the steam to be directed radially to the drum and the water at a downward angle.

Acid for washing the cloth should be similar to Oakite No. 32, diluted with about 11 parts water. For washing the drum and removing calcium carbonate, two parts water dilution should be used. A connection to the vacuum is used as a convenient means of getting the acid into the drum. The tank containing one carboy of acid and filled with water will have the correct dilution for the drum washing. The drum should be kept rotating during washings.

A wet dust recovery plant that is laid out and operated somewhat as suggested will be simple and efficient in operation. It will not require special expert engineering, the maintenance cost will be relatively low, it will require a minimum of supervision, it will avoid the usual messy difficulties in operation and be pleasant to operate.

Buffing Test Chart Offered

To determine the most economical and efficient polishing and buffing compounds, it is necessary to run comparative tests for each operation under identical conditions. As an aid in making these tests, E. Reed Burns Mfg. Corp. offers a cost analysis check chart that should facilitate accurate cost computation.

GARS, GLIPS,

GANISTERS



CONTINUOUS

FEEDING

FOLLANSBEE COLD ROLLED STRIP is widely used



wherever high-speed automatic machines turn out products in great numbers. Continuous feeding from coils is essential to maintaining volume like this. That's why Follansbee Cold Rolled Strip is furnished in continuous coils that keep automatics in action for real productioneering teamwork.

Follansbee Cold Rolled Strip Steel is manufactured to specifications, in tempers and finishes for most industrial applications. Let the nearby Follansbee Representative tell you about Follansbee Steel Service, tailored to fit your needs.

FOLLANSBEE STEEL CORPORATION



GENERAL OFFICES, PITTSBURGH 30, PA.

SEAMLESS TERNE ROLL ROOFING COLD ROLLED STRIP

POLISHED BLUE SHEETS AND COILS

Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee. Sales Agents—Chicago, Indianapolis, Kansas City, Nashville, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Canada. Mills—Follansbee, W. Va.

Follansbee Metal Warehouses - Pittsburgh, Pa., Rochester, N. Y., and Fairfield, Conn.

August 11, 1952

Adhesion by Evaporation

Vacuum techniques effective where evaporated film shows poor adhesion to oxides

SOME METALS are difficult to electroplate or solder due to poor adhesion to their natural hard tenacious oxide coatings. When these coatings are removed, new oxides are formed immediately.

Metals such as aluminum, chromium and titanium become coated with an oxide film even at room

temperature in a vacuum at pressures less than 10-5mm Hg. Thus it is desirable to secure adhesion to these metals by a process that includes their oxides. Excellent adhesion to these oxides can be obtained by high vacuum evaporation techniques.

Simultaneous Deposits - Great progress in these techniques is reported by Engineer Research & Development Laboratories, Ft. Belvoir, Md. Engineers say tests show evaporated film from most metals that form hard adherent oxide coatings can be caused to adhere tenaciously to their own and to other oxides.

Evaporated film of some other metals, notably gold, silver and copper, show poor adhesion to oxides. However, a metal of the latter group can be made to adhere to one of the former group by high vacuum evaporation techniques, according to the laboratory report. Vapors of the two metals can be deposited simultaneously in such a manner as to eliminate the oxide coating that normally hinders ad-

Evaporation Process - To coat titanium with copper, titanium is first evaporated on the oxide-coated titanium. At first evidence of titanium deposition, copper evaporation is begun. After the first copper deposit, the titanium source is turned off and copper evaporation continued until no titanium shows through the surface.

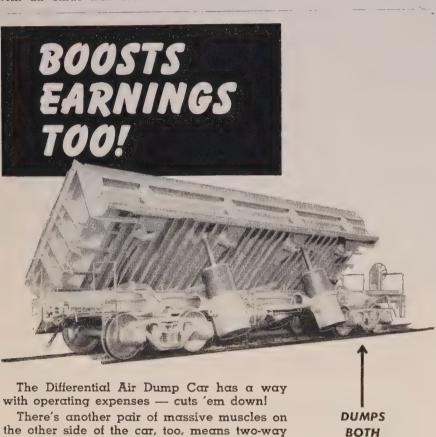
Resulting surface can be soldered directly or built up by electroplating. This method can be adopted for coating rolls or plates in a continuous plater.

Fairless Named for Fritz Medal

Winners of the John Fritz and Hoover Medals, given jointly by four national engineering societies. are announced by American Society of Civil Engineers. Named to receive the first of these honors is Benjamin F. Fairless, president and chairman of U. S. Steel Corp.; the second goes to Clarence D. Howes Canadian Minister of Trade, Commerce & Defense Production.

Participating with the civil engineering group in giving these medals are the American Society of Mining & Metallurgical Engineers, American Society of Mechan ical Engineers and American Inc stitute of Electrical Engineers. Pres sentation will be made Sept. 10 as the Centennial Day luncheon duri ing the convocation of engineers in Chicago.

The John Fritz medal will be presented to Mr. Fairless as "cham pion of the American free enten prise system and for notable achievement in steel production. The Hoover medal, established in honor of the former president will go to Canada's Howe for disting guished public service.



the other side of the car, too, means two-way dumping and greater flexibility.

They're built to take rough treatment whether it's the slam-banging of the clam or the sudden dumping of tons of hot slag. These cars can take it and can come back faster for more.

Higher ratio of payload to dead weight! Fewer trips to the shop and shorter stays when they do go! Add all these up and it spells lower operating costs — another way to say "Boosted Earnings". Write for the full story on these cars.

> Other Differential Products: Locomotives, Mine Cars, Mine Supply Cars, Rock Larries, Mantrip Cars, Dumping Devices and Complete Haulage Systems.

WAYS



FINDLAY, OHIO

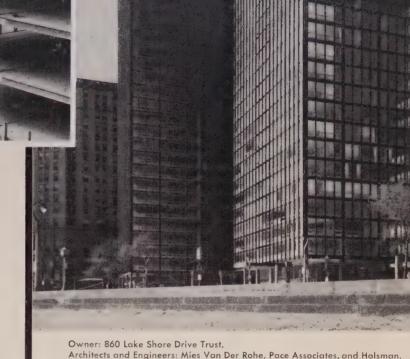
SINCE 1915 - PIONEERS IN HAULAGE EQUIPMENT



THE DRAMATIC UPSWEEP of glass and steel that distinguishes Chicago's latest skyscraper apartment building was made possible by the unique steel design and construction that holds the floor-to-ceiling glass walls in place. The steel face of the building consists of horizontal facia plates welded across the spandrel beams, with vertical I-beam mullions on 5-foot, 3-inch spacings running the height of the building.

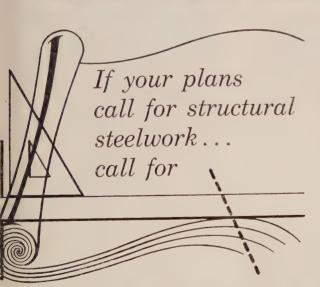


eel Framework
r Chicago's
nique Glass House



Holsman, Klekamp & Taylor, Chicago.

fabricated and erected by AMERICAN BRIDGE



TWO 26-story towers of steel and glass connected at basement and ground floor comprise this ultra-modern 288-apartment structure. The unique design and construction of the vertical mullions and horizontal facia plates made possible the framing that holds the glass walls in place. There are no conventional masonry curtain walls. This imposing building occupies a block-long site along Lake Shore Drive and provides a beautiful view overlooking Lake Michigan on Chicago's swanky North Side within a short drive of the Loop. The 2,842 tons of structural steel and the 856 tons of plate steel for the face of the building were fabricated and erected by American Bridge.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL COMPANY,
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE · BIRMINGHAM · BOSTON · CHICAGO
CINCINNATI · CLEVELAND · DALLAS · DENVER · DETROIT · DULUTH · ELMIRA · GARY · MEMPHIS
MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE · ST. LOUIS
SAN FRANCISCO · TRENTON

UNITED STATES STEEL EXPORT COMPANY, NEW YORK

AMERICAN BRIDGE

50 years of "know how" in fabricating and erecting structural steel -your assurance of a better job.



SIMPLIFY PNEUMATIC DESIGN

with this unique electrically - operated AIR CYLINDER with HYDRAULIC CONTROL



Provides Absolute smoothness of piston movement — eliminates the natural "bounce" or "springiness" of air.

Permits Positive
Control of Piston
Speed in Either
or both directions
and at any point
in piston travel.

WITH Bellows "Controlled-Air-Power" you can combine the speed, economy and flexibility of air-power, the smoothness of hydraulic operation, and inter-locked electrical control, all in a compact, space saving, easily installed assembly.

The Bellows Model BEM Air Motor (a double acting air cylinder) is a complete power unit in itself. Valve, electric valve operating controls, and speed controls are all built-in. The low-voltage built-in solenoid controls operate all day at high speed without hum, pounding, or excessive heat.

When used in the same assembly with the new Bellows Hydro-Check (an adjustable Hydraulic Resistance Unit) you obtain precision control and precision operation of pneumatic systems, easily adjusted to fit any operating requirement.

As a design engineer you'll be interested in knowing more about the Bellows system of pneumatic operation and controls. We'd like to send you two new bulletins showing how "Controlled-Air-Power" operates. No cost. No obligation. Just drop us a note and ask for your

copies of Bulletins AV-300 and CL-30. Address The Bellows Co., Dept: ST 852, Akron 9, Ohio.

The Bellows Co.

Akron 9, Ohio

HIELD ENGINEER OFFICES IN ALL PRINCIPAL CITIES

Plaster Molds Dry Evenly

FAR-INFRARED electric heat is drying precision plaster molds used for aluminum casting more evenly and precisely.

This report is made by W. R. Hale, vice president of Scientific Cast Products Corp., Cleveland where molds are now dried to a tolerance of 0.001-inch. This is compared with 0.002-inch variation under the previous batch-type gasfired method.

Even Drying — This results, he says, because in the former batch oven, molds near the top where hot air was forced in dried faster



FAR-INFRARED DRYING
... means shorter conveyor travel

than those at the bottom. Radian heat now dries all molds evenly.

Here's how it works: A convey moves the molds through the over at about 1½-inch per minute maximum. The first 8 feet of the 1½ foot oven are heated by 36 Chronalox radiant heaters with total capacity of 39.6 kw. The longer far infrared wave length is absorberefficiently.

Ups Effective Production—Rapi heating with these units, a product of Edwin L. Wiegand Co., Pitts burgh, results in shorter conveys travel. One size $12 \times 22 \times 1\frac{1}{2}$ inches dries in about $1\frac{1}{2}$ hours; the other $12 \times 22 \times 2\frac{1}{2}$ inches, in 2 hours.

In the present operation, Mr. Hasays, production rate is about to same as before. The favorable factor lies in effective production raised substantially by reducion rejects 25 to 10 per cent.

CALENDAR

OF MEETINGS

August 11-13, Society of Automotive Engineers: National West Coast meeting, Fairmont Hotel, San Francisco. Society address: 29 W. 39th St., New York 18, Secretary: John A. C. Warner.

August 19-22, American Institute of Electrical ugust 19-22, American institute of Engineers: Pacific general meeting, Phoenix, Institute address: 33 W, 39th St., Ariz. Institute address: 33 W. 39th St New York 18. Secretary: H. H. Henline.

September 3, Steel Kitchen Cabinet Manufacturers Association: Fall meeting, Hotel Cleveland, Cleveland, Association address; Engineers Bldg., Cleveland 14. Secretary: Arthur J. Tuscany.

September 3-13, Centennial of Engineering, Convocation Period: General manager, F. W. Edwards. Address: 57th St. & S. Shore Drive, Chicago 37.

September 4-5, National Conference on Industrial Hydraulies: Illinois Institute of Technology, sponsor, Hotel Sherman, Chicago.
Institute address: Technology Center, Chicago 16. Conference secretary: John C.

September 4-6, American Institute of Chemical Engineers: Palmer House, Chicago. Institute address: 120 E. 41st St., New York 17. Secretary: Stephen L. Tyler.

September 8-9, National Society of Lubrication Engineers: National symposium on fundamentals of friction and lubrication in engineering, Hotel Sherman, Chicago, Society address: 343 S. Dearborn St., Chicago 4. Secretary: W. F. Leonard.

September 8-10, American Standards Associa-tion: National standardization conference. Museum of Science & Industry, Chicago. Association address: 70 E, 45th St., New York 17. Secretary: G. F. Hussey Jr.

September 8-11, American Institute of Mechanical Engineers: Fall meeting, Hotel Sheraton, Chicago. Society address: 29 W. 39th St., New York 18. Secretary: C. E. Davies.

September 8-12, Instrument Society of Amer-Annual fall meeting and exhibit, Public Auditorium & Hotel Cleveland, Cleveland, Society address: 921 Ridge Ave., Pittsburgh 12, Secretary: Richard Rimbach.

September 9-11, Society of Automotive Engineers: National tractor meeting, Ho Schroeder, Milwaukee. Society address: neers: W. 39th St., New York 18. Secretary: John A. C. Warner.

September 9-13, American Chemical Society, Chicago Section: National chemical exposi-Chicago Coliseum, Chicago, Address: 86 E. Randolph St., Chicago 1.

September 10-12, Porcelain Enamel Institute: Shop Practices Forum, University of Illi-nois, Urbana, Ill. Institute address: Du Pont Circle Bldg., Washington 6. Secretary: John C. Oliver.

September 11, American Iron & Steel Institute: Regional technical meeting, Palmer House, Chicago. Institute address: 350 Fifth Ave., Chicago. New York 1. Meeting director: Frank Rag-

September 11-14, Packaging Machinery Manufacturers Institute: Annual meeting, The Homestead, Hot Springs, Va. Institute ad-dress: 342 Madison Ave., New York 17.

September 14-17, National Automatic Merchandising Association: Annual meeting and exhibit. Palmer House, Chicago. Association address: 7 S. Dearborn St., Chicago. Secretary: C. S. Darling.

September 14-19, American Chemical Society: Fall meeting, Atlantic City, N. J. Society address: 1155 16th St. NW, Washington. Executive secretary: Alden H. Emery.

September 14-20, Concrete Reinforcing Steel Institute: Semi-annual fall meeting, The Broadmoor, Colorado Springs, Colo. Institute address: 38 S. Dearborn St., Chicago 3. Secretary: H. C. Delzell.

September 15-17, Allied Railway Supply Association: Annual meeting, Hotel Sherman,

(Continued on p. 116)



3/8" to 4" O. D. 9 to 22 gauge

SQUARE-RECTANGULAR

 $\frac{1}{2}$ " to 2" 20 gauge, 1" to 2 $\frac{3}{4}$ ", 14, 16, 18 gauge Carbon 1010 to 1025

Michigan Tubing

has uniform strength, weight, ductility, I. D. and O. D., wall thickness, machinability, and weldability. It can be flanged, expanded, tapered, swaged, beaded, upset, flattened, forged, spun closed, fluted, and rolled. Available in a wide range of sizes, shapes and wall thicknesses, prefabricated by Michigan or formed and machined in your own plant.

The meticulous workmanship that goes into every piece of Michigan tubing is well illustrated by the center tube shaft manufactured by Michigan for a washing machine.

In the production of this part, absolutely accurate finishing to the closest tolerances is required. For example: at the head— I. D. plus or minus .001, O. D. plus or minus .003. Tube O. D. is 2.50 inches, with .120 gauge thickness. Michigan's knowhow and modern precision and production equipment makes it a simple matter to conform to close tolerances and ship parts ready for assembly by the customer.

We invite manufacturers to consider the advantages in cost savings and product improvement by the use of Michigan tubing.



Consult us for engineering and technical help in the selection of tubing best suited to your needs.

Plus Fabricating of our own tubing Michigan is interested ONLY IN THE FABRICATION OF Stainless steel, copper, brass and aluminum tubing.



FACTORIES: DETROIT, MICHIGAN-SHELBY, OHIO



they're a CLEVELAND Top Quality specialty



CLEVELAND Top Qua **FASTENERS**

THE CLEVELAND CAP SCREW COMPANY

2935 East 79th Street, Cleveland 4, Ohio

Warehouses: Chicago . Philadelphia . New York . Providence

originators of the Kaufman Double HIRUSION Process Ask your jobber for Cleveland Fasteners

Chicago. Association address: 109 N. Wabash Ave., Chicago 2. Secretary: Charles F. Weil.

18, Material Handling Institute September Hotel Cleveland, Cleveland, Institute address: 731-732 DuPont Circle Bldg., Washington 6. Managing director: R. Kenned Hanson.

September 19, The Wire Association, Non ferrous Division: First regional meeting Elton Hotel, Waterbury, Conn. Association address: 453 Main St., Stamford, Conn Executive secretary: Richard E. Brown.

September 19-20, Automotive Engine Rebuild ers Association: Midyear meeting, board o directors, Edgewater Beach Hotel, Chicago Association address: 419 N. Capitol Ave. Executive vice president: R Indianapolis. G. Patterson.

September 22-23, Steel Founders' Society of America: Fall meeting, The Homestead, Ho Springs, Va. Society address: 920 Midland Bldg., Cleveland 15. Secretary: F. Kermin Donaldson.

September 22-24, National Truck Body Manufacturers Association: Annual meeting Muchlebach Hotel, Kansas City, Mo. Asso-ciation address: DuPont Circle Bldg., Washington. Secretary: Shipley D. Burton. September 22-25, American Mining Congress:

Metal & nonmetallic mineral mining con-ference, Denver. Congress address: 1102 Ring Bldg., Washington 6. Secretary: Julian

September 24-26, American Hot Dip Galvanizers Association Inc.: Fall meeting, The Greenbrier, White Sulphur Springs, W. Va. Association address: 1506 First National Bank Bidg., Pittsburgh. Secretary: Stuart J. Swennson.

September 28-October 2, National Screw Machine Products Association: Fall membership meeting, The Broadmoor, Colorado Springs, Colo. Association St., Cleveland 20. Association address: 2860 E. 130th

September 29-30, American Machine Tool Distributors Association: Annual meeting, The

tributors Association: Annual meeting, The Cavalier, Virginia Beach, Va. Association address: 1900 Arch St., Philadelphia 3. Executive secretary: Thos. A. Fernley.

September 29-Oct. 2, American Institute of Steel Construction Inc.: Annual conventions Empress Hotel, Victoria, B. C. Institute address: 101 Park Ave., New York 17. Executive vice president: L. Abbett Post.

September 30-October 3, Association of Iron A Steel Engineers: Fall meeting and exhibit Hotel Statler and Public Auditorium, Cleves land. Association address: 1010 Empir Bldg., Pittsburgh 22. Director: T. V. Esa

OCTOBER

October 3-5, Society of Industrial Designers:
Annual meeting, Shawnee Inn, Shawnee-ord
Delaware, Pa. Society address: 48 E. 4903
St., New York 17. Secretary: Sally Control Swing.

October 6-7, Rail Steel Bar Association: F2/ meeting, Hotel Cleveland, Cleveland, Association address: 38 S. Dearborn St., Ch/ cago. Secretary: W. H. Jacobs. October 6-10, National Hardware Show: Grand

Central Palace, Atlantic City, N. J. Managing director: Frank Yeager.

October 9, American Iron & Steel Institute Regional technical meeting, William Per-Hotel, Pittsburgh. Institute address: 313 Hotel, Pittsburgh. Institute address: 347
Fifth Ave., New York 1. Meeting director Frank Ragland.

October 11-14, National Association of Wasi Material Dealers Inc.: Fall meeting, La Angeles, Association address: 271 Madis Ave., New York. Secretary: Clinton] White,

October 13-17, American Institute of Electrical Engineers: Fall general meeting, New Cleans, La. Institute address: 33 W. 39th Slew York 18. Secretary: H. H. Henline.

October 19-21, Conveyor Equipment Manufat turers Association: Annual meeting, T Greenbrier, White Sulphur Springs, W. V Association address: No. 1 Thomas Circ Washington 5. Executive vice presiden R. C. Sollenberger.

October 20-24, National Metal Congress & H position: Convention Hall, Philadelphia, Seretary: W. H. Eisenman, 7301 Euclid Av

Cleveland 3.

Let J&L CARBON RESTORED cold Finished Bars Cut your production costs



Why incur the cost of removing "decarbed" surface from parts requiring high surface hardness? To eliminate these costs and lower your unit production cost, simply order J&L Cold-Finished Carbon Restored Bars.

This furnace is designed to permit other thermal treatments, such as annealing, normalizing, stress relieving and strain drawing. These treatments can be employed to improve machinability or to meet desired mechanical properties

JONES & LAUGHLIN STEEL CORPORATION

PITTSBURGH 30, PA.

	L
STE	EL

Jones & Laughlin Steel Corporation 404 Gateway Center, Pittsburgh 30, Pa.

☐ Without obligation please send me your booklet "Extra Services to Users of Cold Finished Steel."

Please have your representative call.

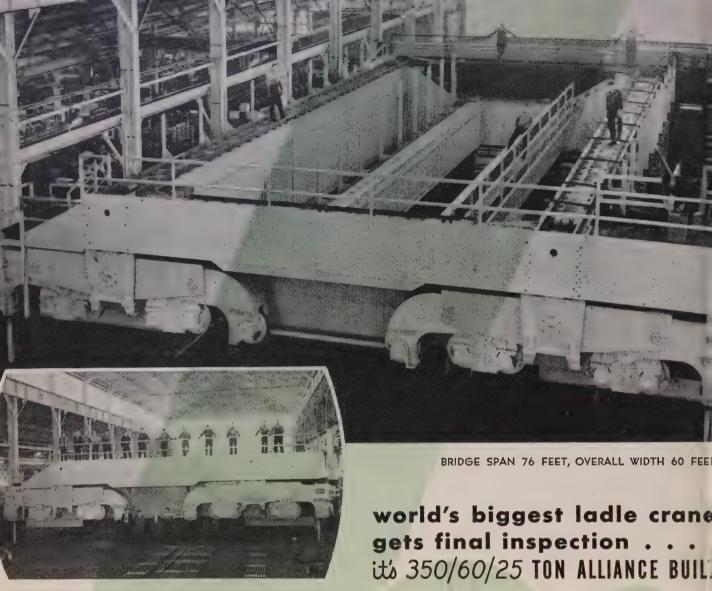
NAME

TITLE

COMPANY

ADDRESS

August 11, 1952



● You're looking at two pictures of the world's largest ladle crane, shown, during final assembly, on the erection floor of the Alliance Machine Company.

This 350/60/25-ton, 4-girder, vibration-free giant will soon be helping one of the world's largest steel producers increase production capacity.

It's equipped with 24 track wheels on the bridge. The crane is so designed that each track wheel bears exactly 1/24th of the total load. And, like all Alliance Cranes, built for handling hot metals, raw materials, and finished products, it's safer, easier to operate and many times more efficient.

even bigger model now being built

The never-ending demand for bigger, better lifting power has kept Alliance on a constant path of research and development. For more than 50 years, Alliance has been the world's largest producer of the world's largest cranes.

Now in production are three 450-ton, 4-girder Alliance ladle cranes. These will be the largest ladle cranes ever built.

Let Alliance engineers help you with your heavy material handling problems. Write us today for an early consultation.



MACHINE COMPANY

World's largest builders of world's largest cranes

ALLIANCE, OHIO • 1622 OLIVER BUILDING, PITTSBURGH, PA.

LADLE CRANES • GANTRY CRANES • FORGING MANIPULATORS • SOAKING PIT CRANES • STRIPPER CRANES • SLAB AND BILLET

CHARGING MACHINES • OPEN HEARTH CHARGING MACHINES • SPECIAL MILL MACHINERY • STRUCTURAL FABRICATION

New Products and Equipment

Precision Rotary Slitting Line

USE REPLY CARD-CIRCLE No. 1

Slitting line adaptable for use by strip steel producers or fabricators is introduced by Herr Engineering Co., Warren, O. In range, the standard slitter handles material up to 0.125-inch thick. It also can be employed as a driven slitter to handle material as thin as 0.001-inch.

The payoff reel has an expanding overhung mandrel that fits into the coil's core and grips it when expanded. This prevents coil wraps from slipping over each other, eliminating scratching or marking of the material. Expansion can be effected manually by means of a hand crank or automatically by a cylinder.

Payoff reel head has four segments that, when expanded, approximate the shape of a tube. This is intended to prevent breaks in the coil. Expansion is effected by links bushed by oil impregnated bronze. There are no gears, gibs or slides to support overhung loads. Thus, no lubrication is required and bushings can be replaced easily in case of wear. Main shaft is carried on double row roller bearings.

Design permits outboard housing to be pulled easily away from the arbors, allowing cutter changes by turning a hand crank. By means of ways and a jack screw this operation is done easily without disturbing the bearings in the housing or exposing them to dust and dirt. Two adjustment screws regulate entrance guides. One removable crank sets the guides to width of material being fed and another crank regulates centering.

Abrasive Shot, Grit Tester

USE REPLY CARD-CIRCLE No. 2

Testing unit for abrasive shot and grit is announced by Precision Shot Co., 159 Pierce St., Birmingham, Mich. The portable, benchtype machine is used to subject shot or grit particles to repeated impact in a manner similar to that employed in production shot blasting machines. Useful life of different shot samples is indicated by screening these samples through



LINE ADAPTABLE FOR STRIP PRODUCERS OR FABRICATORS
... as a driven slitter, handles material 0.001-inch thick

standard sieves after a predetermined length of time in the tester.

Machine weighs 105 pounds, operates automatically under power by a ¾-hp, 110-v motor. It uses a 50-gram shot or grit sample. Time required to test a sample of conventional chilled iron shot is less than one minute. Weighing, loading and screening take about five minutes.

Meter Gages Malten Metal Flow

USE REPLY CARD-CIRCLE No. 3

Magnetic flowmeter, developed for remote measurement of molten metal flow is announced by Special Products Section, General Electric Co., Schenectady 5, N. Y. Built so its sensing element is external to the flowing liquid, the flowmeter offers maximum safety where hazardous metals must be metered. One of its basic features is elimination of all movable parts and

REPLY CARDS

on page 131 will bring you more information on any new products and equipment in this section. physical obstructions to fluid flow.

Meter consists essentially of a permanent magnet with a pipe centered between the magnet pole faces by means of stainless steel supports. As metal flows through the pipe, it cuts the magnetic lines of flux set up by the magnet. This generates a small directional voltage in the pipe proportional to the amount of magnetic flux and the rate of metal flow. Voltage is picked up off the pipe by two stainless wires and transmitted to an instrument showing prevailing flow rate.

Furnace Extends Tool Life

USE REPLY CARD-CIRCLE No. 4

Forging furnace said to heat high speed and alloy chisels properly for forging and hardening, providing true cold shank heating, is announced by Delaware Tool Steel Corp., Wilmington 99, Del. Furnaces provide fast, uniform heating controllable between 1200 and 2800° F. This permits one furnace to be employed for both forging and hardening.

Models are furnished in several sizes, with manual or automatic controls. Operating principle is one intended to confine heat to the chisel point, preventing loss of temper in the shank during tool redressing. This should cut down

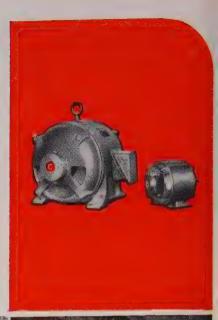
-August 11, 1952



Large or Small...

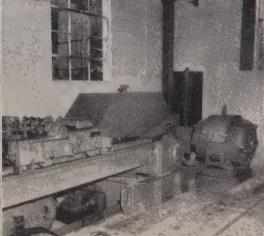
Century

Are Designed to Provide
All the Performance
That Is Built Into the
Machines They Drive





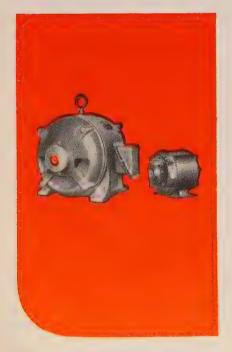
Century 25 horsepower motor on a large automatic production machine.



75 Horsepower Century drip proof motor on a copper tube drawing machine.



Century 125 Horsepower motors on circulating pumps for chilled water.
Used in department store.



Here are some typical examples of equipment powered by large Century motors, which were application engineered for TOP PERFORMANCE.

Matching the operating characteristics, of your equipment is made easy through Century's wide line of single phase, polyphase and direct current motors to choose from. They are made in many types, ranging in size from 1/8 to 400 horsepower, with literally hundreds of specifications, adaptable to specific applications.

Get Top Performance of your equipment through skillful motor application by specifying Century motors on the equipment you buy and for replacement.



shank breakage in tool use. In most cases, shanks are set to remain sufficiently cool to forge without tongs.

Three-Station Boring Machine

USE REPLY CARD-CIRCLE No. 5

Multiple precision facing and step facing operations on clutch plates, bell housings, flywheel assemblies and similar parts can be achieved with a vertical spindle, cam-operated three-station Bore-Matic developed by Heald Machine Co., Worcester, Mass. The three



. . provides multiple precision facing

stations can be set up for simultaneous or progressive production runs and loading on any station can be done while others are operating.

Cams operating the tool slides control cutting speed. This makes a wide range of machine cycling available, depending on number of different cams provided. Tool adjustment is accomplished easily by setting index marked screws on top of the tool blocks. This also can be done while other stations are operating. The rotating air-operated fixtures are mounted on vertically positioned boring heads with fixture clamp levers adjacent to each pushbutton control station.

Chip removal is simplified by a worm or screw type conveyor that gathers chips at the base of each station, depositing them in a pan at the right side of the machine.

Guillotine Clips 1/2-Inch Rod

USE REPLY CARD-CIRCLE No. 6

Manco Mfg. Co., Bradley, Ill., introduces its model 200-E Guillotine for rapid production cutting of steel rod up to ½-inch. Among its

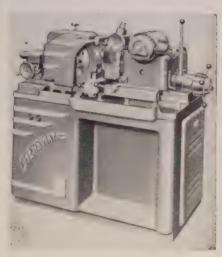
design features, ease and convenience of pushbutton cutting eliminate operator fatigue and work to increase production. Complete cutting cycle takes ¼-second.

Unit exerts a maximum 20-ton thrust from a portable hydraulic pump, 2-hp, 220 to 440-v, 3-phase motor connected to a 25-foot hydraulic hose. Blades can be removed easily for sharpening. Unit is also adaptable to high-speed riveting, punching and swedging operations.

Centerless Grinding Machine

USE REPLY CARD-CIRCLE No. 7

Redesigned to accommodate stock diameters from 0 to 1½-inch, the model No. 1-R centerless grinding machine is offered by Diversified Metal Products Co., 5125 Alcoa Ave., Los Angeles 58, Calif. Because of the machine's increased



. . . takes 0 to 1 1/2 -inch stock diameters

capacity, the company recommends operation with the use of 5-hp motors only.

In addition to its redesign, the machine includes a complete line of accessories for any type centerless grinding operation. These include automatic air-operated stock ejectors, outboard roller support attachments, toggle cam devices to provide greater width of opening between wheels and an automatic cycling attachment for infeed grinding.

Grinder features a massive wheel spindle supported by precision roller and ball bearings. These combine to produce a cool running spindle that requires no preoperating warmup to hold size

tolerances. Machine is set to hold a tolerance of 0.0002-inch.

Truck Handles Double Pallets

USE REPLY CARD-CIRCLE No. 8

Improved Leverlift floor truck, made by Service Caster & Truck Corp., Albion, Mich., is designed for handling double-faced pallets. Unit has a forked-design platform with toggle boosters and helper rolls that permit it to slip easily into double-faced pallets without maneuvering.

Toggle boosters engage bottom pallet face first, lifting the platform slightly so rear wheels roll smoothly into position. As platform is raised, it moves toward the operator, facilitating use against walls. Truck capacity is 4000 pounds. It is available in five standard fork lengths.

Bench Model Honing Machine

USE REPLY CARD-CIRCLE No. 9

Superior Hone Corp., Elkhart, Ind., offers its bench model honing machine and portable coolant unit. Machine, called model J, handles production honing of keyways, spline gears, most broken



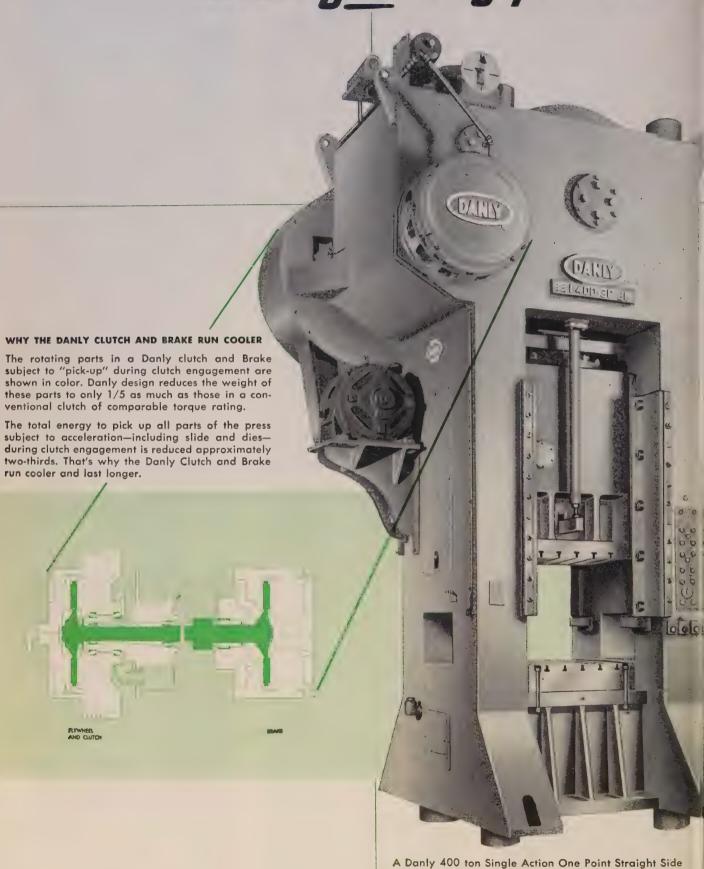
. . . designed with portable coolant unit

surfaces and internal finishing operations on a bench setup basis. Its infinitely variable spindle speeds range from 400 to 1000 rpm without changing belts. Honing range reaches 0.185 to 2.500 inches diameter without adapters. Permanent type mandrels fit spindle with bayonet lock and no tools are required to change mandrels or stones.

Range of adjustment and ready portability make the coolant unit adaptable to any dry honing machine and provide rapid conversion

when you buy presses.

Press equipped with the Danly Cool-Running Clutch. Outboard mounting of both clutch and brake permit renewal of friction discs in less than 30 minutes.



take a close look at the drive

Actual production tests show that the new Danly Cool-Running Clutch, an exclusive Danly Press feature, withstands up to 7 times more engagements than a conventional press clutch before it is necessary to make adjustment for lining wear. The resulting reduction in maintenance and press down time for clutch take-up, an important factor in press operating costs, accounts for outstanding savings.

Features like this—together with automatic lubrication and extra rigid precision construction—are the reason why time and cost conscious production men specify . . .

Danly's complete engineering staff is at your service to help you select the best presses for your job. Write today—and ask for the Danly Straight Side Press Catalog.



DANLY MACHINE SPECIALTIES, INC.

2100 South Laramie Avenue, Chicago 50, Illinois

It costs less to ruw a DANLY PRESS!



Autofeed

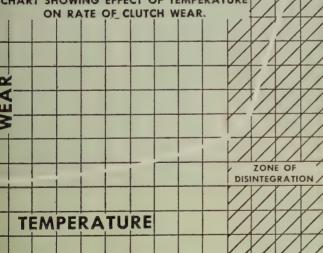




Gap Frame



CHART SHOWING EFFECT OF TEMPERATURE ON RATE OF CLUTCH WEAR.





WHY DANLY FRICTION DISCS LAST UP TO 7 TIMES LONGER

Chart shows how heat causes disintegration of lining in a press clutch. The steep slope in the curve shows how wear rapidly increases with temperatures.

The cool running Danly clutch generates less heat and the small amount generated is rapidly carried off by a continuous blast of forced air.

Normal operation of a Danly Cool Running Clutch is only 35° above room temperature!



from dry to wet operations. Easy to move and mount, it can serve several hones in the same shop, sliding in and out of permanent mounting brackets fitted at each machine location.

Lift Weight Down 25 per cent

USE REPLY CARD-CIRCLE No. 10

Light, bulky loads can be stacked without wasted lifting capacity with the series C Transtacker introduced by Automatic Transportation Co., 149 W. 87th St., Chicago, Ill. Weight of the driver-led



. . . no wasted capacity on bulky loads

stacker is cut about 25 per cent urder the average to gain efficiency in bulky handling operations.

Models are available with tilting or telescopic features, or both Telescopic version tiers to 133 inches maximum; over-all collapse, height is 83 inches. Nontelescopy lift reaches 69 inches. Lifting specis 17 to 25 fpm loaded; 36 fpm unloaded. Power unit and batternare located far enough forward to permit five degrees of forward and 10 degrees of backward tilt.

Cleaned Air Exhausted Outside

USE REPLY CARD-CIRCLE No. 11

Model 30ND50 dust collected made by Aget-Detroit Co., 13 Main St., Ann Arbor, Mich., provides for outside exhaust cleaned air. Collector is built with an overdrive for use on power has ing frequencies of less than cycles. Rated capacity reaches 3630 cfm at 6 inches static suctions.



GAYLORD BOXES

Assure Easier Warehouse Handling of Your Product

Built with exceedingly high compression strength, Gaylord Boxes eliminate "weaving" or "toppling" in storage and in transit.

That's just one more example of the economy of Gaylord controlled quality.

Your nearest Gaylord representative is ready to help you with your packaging problems.

Get in touch with him.

It's the unseen quality that gives you the extra margin of safety in



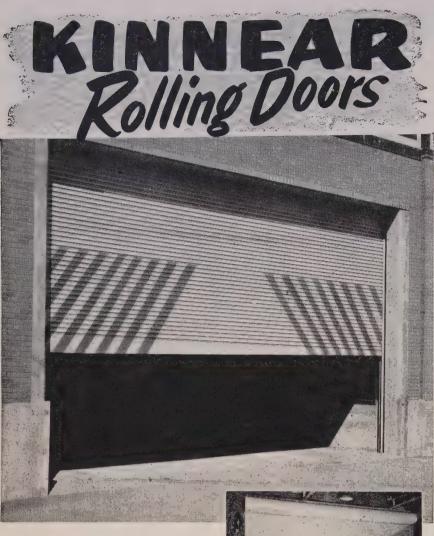
GAYLORD CONTAINER CORPORATION

General Offices: SAINT LOUIS

ORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT BAGS AND SACKS . KRAFT PAPER AND SPECIALTIES

ew York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit • Columbus ort Worth • Tampa • Dallas • Cincinnati • Des Moines • Oklahoma City • Portland • Greenville • St. Louis • San Antonio • Memphis • Kansas City • Bogalusa • Chattanooga dwaukee • Weslaco • New Haven • Amarillo • Appleton • Hickory • Greensboro • Sumter • Jackson • Miami • Omaha • Mobile • Philadelphia • Little Rock • Charlotte • Cleveland

125



Greater Efficiency
SAVES
Time, Space, and Money

Every Kinnear Door is tailored to fit the individual opening, in old or new buildings. Coiling neatly above the lintel, they open straight up—can't interfere with traffic or other plant activity. A half-century of use under the most difficult conditions gives complete proof of the Kinnear Door's capacity for years of hard, constant service.

They save money because their rugged, all-steel, interlocking slat curtain assures long life and low maintenance costs, plus extra protection against fire, intrusion, or wind damage. Slat surfaces are heavily zinc coated by the hot-dip

process, and a special Kinnear Paint Bond is applied to assure lasting paint adhesion.

They save space by opening straight up and coiling above the doorway, allowing all floor and wall space around the door to be used at all times.

They save time with their smooth, easy, gliding action. With motor operation, doors can be fully and safely controlled by push-buttons from any number of convenient locations.

Write for your copy of new catalog.

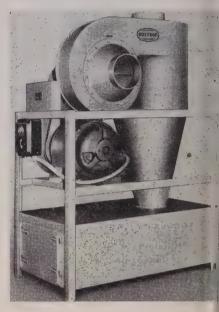
The KINNEAR Manufacturing Company

FACTORIES:
1780-1800 Fields Ave.
Columbus 16, Obio
1724 Yosemite Ave.,
Sam Francisco 24, Calif.
Effices and Agents in Principal Cities



on an 8-inch diameter pipe.

Standard size, pretested cyclone separator removes dust and direction the air and permits discharge of the cleaned air out-of-doors with any toxic or objectionable fumes. Dust storage capacity is



. . . has overdrive for power under 60 cycles

12 cu ft. Access to the dust compartment is gained by doors at either end. Supplying power is 5-hp motor, operating on 220 cm 440-v, 3-phase, 60-cycle. Manustarting switch has thermal overload protection.

Downflow Purifier Cleans Vapor USE REPLY CARD—CIRCLE No. 12

Dirt, moisture, riser discharge and solids are removed before passing to distribution pipidil through action of an internal down flow purifier made by V. D. A41 derson Co., 1935 W. 96th Sal Cleveland 2, O. Purifier is it stalled in an auxiliary tank in mediately above evaporators as inside steam drums, flash tang and other vessels. Model is co signed to increase heating efficient cy and to protect pipeline equal ment in steam applications. chemical and petroleum vessel unit recovers valuable vapors.

Purifiers are said by the company to deliver vapor with parts per million or less too solids in boiler application. In other uses, it removes 99 per confidence of all entrainment. One feature design of the separating elements units maintain a constant separation.

Important California Industry saves \$196,000 yearly with Yale Electric Trucks

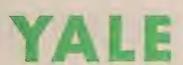


BUAMOND

Whatever your business ... textiles, tool-making, food processing or steel... you must move materials from one point to another. And whether your labor force is measured in tens or

in thousands ... efficient, economical handling of materials is today more important than ever ... and often means the difference between profit and loss.

Yale Materials Handling Equipment is chalking up savings of from 50 to 75% in many businesses that never realized how costly their former handling methods were. You can count on Yale, the leading manufacturer of materials handling equipment, to give expert attention to your specific handling needs. Mail coupon for booklet.



MATERIALS HANDLING
EQUIPMENT

YALE is a registered trade mark of The Yale & Towne Manufacturing Co.

Yale Electric Hydraulic Fork Trucks
Brought These Benefits To
California Walnut Growers Assoc.

- f. savings in Money. Yale Equipment cut the cost of handling from \$.05 to \$.004 per bag. Reduced overall handling expenses \$196,000 a year.
- 2. SAVINGS IN MANPOWER. Change from hand truck methods to mechanized Yale equipment released 9 out of 10 men from handling...made them available for other more productive work.
- 3. SAVINGS IN TIME. Yale Equipment sped processing, storage and shipping operations, ended bottlenecks...offered many time-saving short-cuts essential with a highly seasonal product.

4111111111111111

ALE GAS AND ELECTRIC INDUSTRIAL TRUCKS • YALE <u>worksavers</u> • Yale hand trucks • Yale hand and electric hoists • Yale pul-lifts

ugust 11, 1952 127

ing efficiency even as velocities become greater.

Cradle Supports Tooling Work

USE REPLY CARD-CIRCLE No. 13

Safety parallel cradle developed to reduce shop accidents by eliminating haphazard methods of supporting dies, jigs, etc., during drilling is announced by Acro Safety Parallel Division, 24 S. Crawford Ave., Chicago 24, Ill. Steel cradle consists of two parallel units, each 4 inches high and 9% inches long, built in the form of a frame with center and end posts 1 inch diameter.

Supporting top and bottom bars are 1 inch wide and $\frac{1}{2}$ -inch thick. An adjusting rail is 20 inches long, $\frac{1}{8}$ -inch wide and $\frac{7}{16}$ -inch thick with full center slot. This joins the two parallel units.

Lathe Gets Variable Drive

USE REPLY CARD-CIRCLE No. 14

Infinitely variable electronic drive for its 9 x 24-inch tool and gagemaker's lathe is announced by Hendey Machine Co., Torrington.

Conn. Drive unit is designed by the company to fit into the lathe base as optional control for the 3hp, direct current adjustable speed



. . . stepless speed from 25 to 3000 rpm

motor. Drive contains two 18-amp electronic rectifier tubes in its power circuit, plus one smaller tube in the control circuit. It provides stepless speed from 25 to 3000 rpm by potentiometer control of both field and armature of the

motor. Close speed control is obtained even under changing load.

Full torque is available at low speeds over the complete armature control range through voltage compensation. The electronic unit requires about 60 seconds for heating, but power cannot be applied before tubes are heated. Dynamic breaking accomplishes full stop from maximum speed in about 1½ seconds.

Controls Show Only Meter

USE REPLY CARD-CIRCLE No. 15

Complete control assembly made for use where only the meter will show on the panel is announced by Assembly Products Inc., Main at Bell St., Chagrin Falls, O. Called the Simplytrol, its chassis is provided with hinged mounting brackets so it can be mounted at any convenient location in side the equipment or behind the panewhere it is used. Three meter sizes, $2\frac{1}{2}$, $3\frac{1}{2}$ and $4\frac{1}{2}$ inches, are available.

Contact meters indicate and com trol voltage, current or temperas



cure. Voltage ranges from 0 to 5 millivolts to 500 v; current, from 0 to 20 microamperes to 50 amp. Compensated temperature millivoltmeters range from minus 200 to plus 3000° F. External multipliers make higher voltage and current ranges possible.

Hole Punch Series Introduced

USE REPLY CARD-CIRCLE No. 16

Series designed for punching holes in flanges, angles, container sides and similar shaped and formed work is introduced by Wales-Strippit Corp., N. Tonawanda, N. Y. Hole punching in the side of the work instead of on top of flat surface is made possible by design that moves punches back and forth horizontally rather than vertically. The type H units are made to eliminate built-up, single purpose cam action dies. Each punch is independent and self-contained.

All parts—punch, die guide and stripping spring—are held as a unit by the holder. In addition, the holder assures perfect alignment of punch and die, helping eliminate long periods usually required for aligning conventional dies.

Etching-Type Cleaner

USE REPLY CARD-CIRCLE No. 17

No. 101, an etching-type cleaner used in preparing aluminum and its alloys for spot welding, is announced by Diversey Corp., Chicago 13, Ill. Besides completely removing surface contamination, it breaks the oxide coating. As a surface conditioner and cleaner, it is recommended for cleaning phase of spot welding in those cases where oxide film is especially difficult to remove and time cycles must be shortened.

Lighter, Tip Cleaner

USE REPLY CARD-CIRCLE No. 18

Combination of a three flint spark lighter and tip cleaners in one tool is a development of Thermacote Co., Newark, N. J. Known as Tip-O-Liter, it has a case of 12 spiral tip cleaners attached directly to the handle of the lighter. The spiral type ribs of the cleaners eliminate frequent breakage of cleaners and allow removal of carbon and slag without scratching or enlarging the orifice of the torch.

Buttonhead Grease Fitting

USE REPLY CARD-CIRCLE No. 19

A giant buttonhead grease fitting with one-piece construction is introduced by Universal Lubricating Systems Inc., Oakmont, Pa., for use on all heavy industrial machinery. It is built to provide maximum grease flow. Its one-piece construction prevents leakage.

Conveyor Belt for Inclines

USE REPLY CARD-CIRCLE No. 20

Baldwin Belting Inc., New York 7, N. Y., offers a conveyor belt for carrying articles up or down inclines of 25 to 30 degrees. Known as Tread-Top, it has a nonskid cover that grips like the tread on a tire. Its flexibility enables it to



It's the RELIABILITY of HEVI DUTY Furnaces that COUNTS ADVANCED design, rugged construction and high quality materials are combined with years of furnace building experience to produce Hevi Duty box furnaces. Round rod heating elements and sturdy radiant plate element supports as-

LONG HEATING ELEMENT LIFE Round rod return bend heating ele-ments are adequately supported by radiant plates of high grade refrac-tory material. sure continuous performance under severe operating conditions. Users report that reliability and trouble free service are outstanding advantages of Hevi Duty furnaces.

Write for Hevi Duty Bulletin No. HD441

ELECTRIC EXCLUSIVELY

DRY TYPE TRANSFORMERS - CONSTANT CURRENT REGULATORS

MILWAUKEE 1, WISCONSIN

run over pulleys as small as 2 inches in diameter.

Radio Frequency Voltmeter

USE REPLY CARD-CIRCLE No. 21

An operator of a dielectric heating apparatus can find out how much heat is being applied to the electrodes with a radio frequency voltmeter developed by Westinghouse Electric Corp., Pittsburgh 30, Pa. Two scale ranges are used in measuring rms values at voltages up to 10,000 v: 0-5000 v and 0-10.000 v.

Extension Chuck

USE REPLY CARD-CIRCLE No. 22

An extension chuck that elima inates soldering, brazing and special length drills is available from Ritmar Co., Huntington, NI Y. Known as Little Beaver, regul lar straight shank drills can be in serted from rear of chuck when drill breaks.

Reversible Wheel Adaptor

USE REPLY CARD-CIRCLE No. 23

A reversible wheel adaptor ill available from Detroit Milling Cuil ter Co., Farmington, Mich. Whese wheel wears on one edge, it can be reversed on the spindle without the delay of retruing the wheel. Adapt or stays mounted on the wheel: all times. It is designed for No.4 Brown & Sharpe and similar may chines having a 1-inch spindle wi 3-inch/foot taper.

Air-Operated Bench Vise

USE REPLY CARD-CIRCLE No. 24

Models 610-DP and 1000-DP as operated bench vises are announce by Van Products Co., Erie, E. Power is furnished by a compact cylinder with an 8-inch bore aa two pistons of 50 square inch each, separated by a removal cylinder head. Model 610-DP

USE A REPLY CAL

Just circle the corresponding number of any item in this section for more information. vailable with stationary or swivel ase; the other with swivel base aly.

lastic Floor Resurfacer

E REPLY CARD-CIRCLE No. 25

Dastex X, a grease and oil restant plastic floor resurfacer that in be laid over old existing floors, announced by Dasco Chemical D., Baltimore, Md. It is trowled rectly onto the surface and recuires no bonding agent or primer.

iniature Indicators

E REPLY CARD-CIRCLE No. 26

Miniature indicators for liquid vel and valve position that octopy a minimum panelboard space, re offered by Minneapolis-Honeyell Regulator Co., Philadelphia I, Pa. The two units are similar appearance, differences being in plor of the indicating tapes and vailability of alarm switches on the level indicator.

ir Hydraulic Cylinder

E REPLY CARD-CIRCLE No. 27

Modernair Corp., San Leandro, alif., offers an air hydraulic cylder in two standard bore sizes, 2 and 3 inches. It features interparable mounting brackets. andard shop airline pressure is cilized to actuate the cylinder and built-in hydraulic system furshes positive regulation of forard or reverse stroke movement adjustment of speed control.

lot Bearing Bushing

E REPLY CARD-CIRCLE No. 28

J. G. Jergens Co., Cleveland 5, offers a pilot bearing bushing at provides a life-time seal gainst damaging grit and dust. It the use of the bushing, tared bearings can be adjusted to impensate for wear and are adaphle to receive removable slip ishings as well as keys or keyays.

REPLY CARD

Just circle the corresponding number of any item in this section for more information.





A huge kingpin is tested for flaws through its entire length.



Reflectoscope testing this steering gear will reveal any hidden defects in the metal or in the weld where the two ends are joined.

MUST NOT FAIL

REFLECTOSCOPE PROVIDES FAST, DEPENDABLE 100% TESTING

AUTOMOTIVE INDUSTRY: A dangerous accident caused by the failure of an important part would seriously damage the reputation of an automobile manufacturer. For this reason, the Molloy Manufacturing Company of Detroit—producers of COLD FORGED steel transmission shafts for two major automobile corporations—rely on Sperry Reflectoscope testing to eliminate the possibility of hidden defects in their product.

HEAVY CONSTRUCTION EQUIPMENT: The "Tournarocker", manufactured by R. G. LeTourneau, Inc. of Peoria, is a powerful, high-speed, materials-handling machine that can carry 18 tons fully loaded. Capable of traveling at 35 m.p.h., it is extensively used wherever huge amounts of material must be moved. As any parts failure on-the-job would, obviously, be dangerous and cause costly delays, the Le Tourneau Company looks to Sperry Reflectoscope testing to assure that nothing but defect-free axles, gears and kingpins are incorporated in the "Tournarocker".

Learn how you can reduce testing costs and improve quality control in your plant. Write today for complete information about the Sperry Reflectoscope . . . for sale, or for lease. Ask about Sperry's day to day Testing Service.

SPERRY PRODUCTS INC.

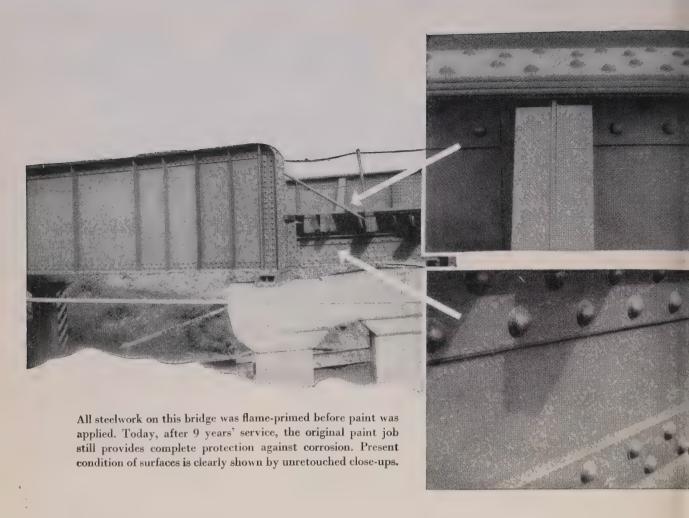


608 SHELTER ROCK ROAD

Danbury, Connecticut

REPRESENTATIVES IN PRINCIPAL CITIES

439



Your Steelwork . . .

How Will It Look in 1960:



Steelwork you coat with good paint today can still look like new ten years from now, if you flame-prime all exposed surfaces first. And what you'll save on main-

tenance, because of increased protection due to flame-priming, will more than pay for all the flamepriming apparatus and materials you need for the job.

Flame-priming is simple to do, requires little equipment, and costs little. A brush of oxy-acetylene flames pops off scale and drives out moisture. Paint applied to the warm, dry surface goes on quickly

and smoothly, bonds tightly, and lasts longer

Flame-priming is one of many time- and money saving Linde methods for making, cutting, joining treating, and forming metals. So, whatever you with metals, there is a good chance that Linde know-how, show-how, and equipment can help you do it better, more quickly, or at lower cost.

To find out, without obligation, telephone or writer our nearest office today. Linde Air Product Company, a Division of Union Carbide and Carbide Corporation, 30 East 42nd Street, New York N. Y. Offices in Other Principal Cities. In Canada Dominion Oxygen Company, Limited, Toronto.



Products and Processes for MAKING, CUTTING JOINING, TREATING, AND FORMING METAL

The term "Linde" is a registered trade-mark of Union Carbide and Carbon Corpora

The Market Outlook

RECOVERY by the steel industry from the strike is pretty much on schedule. Both primary and finishing facilities are getting back into heavy production stride. Numerous closed metalworking plants are resuming operations with steel again flowing. But many loose ends remain to be tied firmly before "finis" is written to the longest and most damaging work stoppage in the steel industry's history. It will take at least another week or so for ingot production to regain pre-strike level, three weeks after official ending of the walkout. Still more time will be required for the rolling mills to attain capacity output.

TRAVAIL—As expected, reactivating of the nation's ponderous steel facilities is not being achieved without considerable toil and trouble. Local labor disputes are hampering resumption at some points. Contract details remain to be worked out with the union and these can prove troublesome and time-consuming. While no unusual damage to facilities resulted from the long suspension, some producing units will be idle several weeks for repairs. In addition, shortages of semifinished steel are hampering rolling mill operations to the end some time will elapse before finished products are flowing to consumers in normal volume.

OPERATIONS—The national ingot operating rate last week jumped 42 points to 85 per cent of capacity. Output was the largest since the last week in May when 2,091,000 net tons were produced.

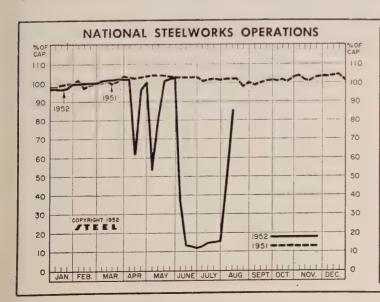
DISTRIBUTION—Shortages threaten in the major steel products over coming months, especially for civilian goods manufacturers. Indications are there will be no substantial easing in general supply conditions until next spring. While the fog enveloping distribution is beginning to clear away and a flow pattern is developing under government direction, many of the problems confronted will remain unanswered until more is known with respect to mill tonnage arrearages, warehouse stocks, military requirements, and minimum civilian goods steel needs

to support full employment. Military take beginning in September is expected to run no more than 1 million tons monthly, only slightly more than before the strike.

SET-ASIDES—To assure supplies for military, atomic energy, machine tool and component manufacturers the government ordered mill set-asides for fourth quarter. Certain percentages of the various products must be held for these requirements, and these tonnage reservations do not take into account priority orders placed under third quarter and earlier allotments, which must be filled by mills. Nor do they consider the steel destined for warehouses and further converters. Further, the set-asides are exclusive of any new directives.

THIRD QUARTER—Under the government regulations the mills must give preference to third quarter orders with all military requirements for the period to be filled by Nov. 30, even though this means delay in shipping civilian tonnage scheduled for earlier delivery. Civilian orders for third quarter and earlier shipment, however, carry a priority over all fourth quarter orders, including the military setasides. Indications are fourth quarter tonnage will extend into first quarter next year.

PRICES—The all-important question of steel prices was up in the air last week. While the Office of Price Stabilization gave blanket approval to an overall increase averaging 4.7 per cent on carbon steel products, actual approval of the separate companies' new price lists, up to late last week, had not been given. Considerable haggling over details of the increases was reported between government officials and steel company pricing authorities. Expectations are the new schedules, at latest, will come out this week. Manganese products prices were increased on the average \$40 per ton, effective Aug. 8. The increases include ferromanganese and spiegeleisen, and will add 46 cents per ton to the cost of producing finished steel. STEEL's composites are unchanged pending issuance of new schedules.



DISTRICT INGOT RATES

Percentage of Capacity Engaged at Leading Production Points

	Week Ended		Same	Week
	Aug. 9	Change	1951	1950
Pittsburgh	. 85	+ 49.5*	98.5	101.5
Chicago	. 87	+ 34	104.5	102
Mid-Atlantic	. 80	+36.5	100.5	98
Youngstown		+ 45	106	106
Wheeling	63.5	+16	98	97
Cleveland	. 94	+ 58*	104	97.5
Buffalo	.104	+53	104	104
Birmingham	. 87	+ 72	100	100
New England		+ 22	92	98
Cincinnati	. 87	+ 32*	101	103
St. Louis	. 99	+ 2.5	90.5	89
Detroit	106	+ 33*	98.5	104
Western	. 78	+42	103	98
Estimated nationa	1			
rate	85	+ 42*	102	99.5

Based on weekly steelmaking capacity of 2,077,040 tons in 1952; 1,999,034 tons for 1951; 1,928,721 tons for second half, 1950; 1,906,268 tons for first half, 1950.

,906,26% tons for first half, 1950. * Change from revised rate for preceding week

Composite Market Averages

·	Aug. 7 1952†	Week Ago	Month Ago	Year Ago	5 Yrs. Ago
FINISHED STEEL INDEX, Weigh Index (1935-39 av.=100) Index in cents per lb	ted: 171.92† 4.657†	171.92† 4.657†	171.92† 4.657†	171.92 4.657	120.39 3.261
ARITHMETICAL PRICE COMPOSI Finished Steel, NT	\$106.32† \$2.54 52.16 53.27 43.00	\$106.32† 52.54 52.16 53.27 43.00	\$106.32† 52.54 52.16 53.27 43.00	\$106.32 52.54 52.16 53.27 44.00	\$75.41 36.11 35.61 36.79 41,75

Weighted finished steel index based on average shipments and Pittsburgh district prices of the following 14 representative products during 5-year base period 1935-39: Structural shapes, plates, rails, hot-rolled and cold-finished bars, pipe, wire, nails, tin plate, hot and cold-rolled sheets, galvanized sheets, hot and cold-rolled strip. For complete explanation see STEEL Sept. 19, 1949, p.54.

Arithmetical steel price composite based on same products as the weighted finished steel index with the exception of rails, cold-finished bars, galvanized sheets and hot-rolled strip.

Basic and No. 2 foundry pig iron composites are based on average prices at Pittsburgh, Bethlehem, Birmingham, Buffalo, Chicago, Cleveland, Granite City, Youngstown. Malleable composite based on same points except Birmingham.

Steelmaking scrap composite based on average prices of No. 1 heavy melting steel at Pittsburgh, Chicago and Philadelphia.

Comparison of Prices

Comparative prices by districts, in cents per pound except as otherwise noted. Delivered prices based on nearest production point.

FINISHED MATERIALS

	Aug. 7	Week	Month	Year	5 Yrs.
	1952†	Ago	Ago	Ago	Ago
Bars, H.R., Pittsburgh	3.70	3.70	3.70	3.70	2.90
Bars, H.R., Chicago		3.70	3.70	3.70	2.90
Bars, H.R., del. Philadelphia	4.252	4.252	4.252	4.20	3.28
Bars, C.F., Pittsburgh	4.55	4.55	4.55	4.55	3.55
Shapes, Std., Pittsburgh	3.65	3.65	3.65	3.65	2.80
Shapes, Std., Chicago	3.65	3.65	3.65	3.65	2.80
Shapes, del. Philadelphia	3.93	3.93	3.93	3.91	2.94
Plates Pittsburgh	3.70	3.70	3.70	3.70	2.95
Plates, Chicago	3.70	3.70	3.70	3.70	2.95
Plates, Coatesville, Pa	4.15	4.15	4.15	4.15	3.15
Plates, Sparrows Point, Md.	3.70	3.70	3.70	3.70	2.95
Plates, Claymont, Del	4.15	4.15	4.15	4.15	3.15
Sheets, H.R., Pittsburgh	3.60-75	3.60-75	3.60-75	3.60-75	2.80
Sheets, H.R., Chicago	3.60	3.60	3.60	3.60	2.80
Sheets, C.R., Pittsburgh	4.35	4.35	4.35	4.35	3.55
Sheets, C.R., Chicago	4.35	4.35	4.35	4.35	3.55
Sheets, C.R., Detroit	4.55	4.55	4.55	4.55	3.70
Sheets, Galv., Pittsburgh	4.80	4.80	4.80	4.80	3.90
Strip, H.R., Pittsburgh			3.75-4.00		2.80
Strip, H.R., Chicago	3.50	3.50	3.50	3.50	2.80
Strip, C.R., Pittsburgh	4.65-5.35	4.65-5.35	4.65-5.35	4.65-5.35	3.55
Strip, C.R., Chicago	4.90	4.90	4.90	4.90	3.65
Strip, C.R., Detroit	4.85-5.60	4.85-5.60	4.85-5.60	4.85-5.60	3.70
Wire, Basic, Pittsburgh	4.85-5.10	4.85-5.10	4.85-5.10	4.85-5.10	3.675
Nails, Wire, Pittsburgh	5.90-6.20	5.90-6.20	5.90-6.20	5.90 6.20	4.25
Tin plate box, Pittsburgh	\$8.70	\$8.70	\$8.70	8.70	\$5.75
SEMIFINISHED					

Billets, forging, Pitts. (NT) \$66.00 \$66.00 \$66.00 \$66.00 Wire rods, $\frac{7}{32}$ -%", Pitts. . . 4.10-30 4.10-30 4.10-30 4.10-30

, 02 12 ,				
PIG IRON, Gross Ton				
Bessemer, Pitts\$53.00	\$53.00	\$53.00	\$53.00	\$37.00
Basic, Valley 52.00	52.00	52.00	52.00	36.00
Basic, del. Phila 56.75	56.75	56.75	56.49	38.72
No. 2 Fdry, Pitts 52.50	52.50	52.50	52.50	36.50
No. 2 Fdry, Chicago 52.50	52.50	52.50	52.50	36.00
No. 2 Fdry, Valley 52.50	52.50	52.50	52.50	36.50
No. 2 Fdry, del. Phila 57.25	57.25	57.25	56.99	39.22
No. 2 Fdry, Birm 48.88	48.88	48.88	48.88	33.38
No. 2 Fdry (Birm.) del. Cin. 56.43	56.43	56.43	55.33	38.25
Malleable, Valley 52.50	52.50	52.50	52.50	36.50
Malleable, Chicago 52.50	52.50	52.50	52.50	36.50
Charcoal, Lyles, Tenn 66.00	66.00	66.00	66.00	44.00
Ferromanganese, Etna, Pa.228.00	188.00	188.00	188.00	140.25*

F.o.b. cars, Pittsburgh. †Preliminary,

SCRAP, Gross Ton (including broker's commission)

Tion T Treat & Witch		\$44.UU	\$44.UU	a 40.00	342.50
No. 1 Heavy Melt,	E. Pa 42.50	42.50	41.00	43.50	40.50
No. 1 Heavy Melt,	Chicago, 42.50	42.50	42.50	43.50	42.25
No. 1 Heavy Melt,	Valley 44.00	44.00	44.00	45.00	44.00
No. 1 Heavy Melt,	Cleve 43.00	43.00	43.00	44.00	42.50
No. 1 Heavy Melt,	Buffalo. 37.00*	37.00*	37.00*	44.00	42.50
Rails, Rerolling, C	hicago 52.50	52.50	52.50	52.50	49.75
No. 1 Cast, Chica,		45.00	45.00	49.00†	43.50
, , , , , , , , , , , , , , , , , , , ,		-0100	20.00	20,001	20.00

^{*} Nominal. † F.o.b. shipping point.

COKE, Net Ton

Beehive, Fdry, Connlsvl 17.00 Oven Fdry, Chicago 23.00	17.00 23.00	17.00 23.00	\$14.75\$13 17.50 14 23.00	1.00-15.00
NONFERROUS METALS				
Copper, del. Conn 24.50	24.50	24.50	24.50	21.50
Zine, E. St. Louis 13.50	15.00	15.00	17.50	10.50
Lead, St. Louis	15.80	15.90	10 00 14	00 14 05

121.50 19.00 80.00 Aluminum, del. 20.00 Antimony, Laredo, Tex. .. 39.00 15.00 33.00 19.00 42.00 Nickel, refinery, duty paid. 56.50

PIG IRON

F.o.b. furnace prices quoted under GCPR as reported to STEEL Minimum delivered prices are approximate and do not include 3% fed eral tax. Key to producing companies published on second following page

PIG IRON, Gross Ton

FIG IKON, GIOSS TOIL		Nto 9	Malle-	Besse-
	D:-	No. 2	able	mer
	Basic	Foundry		
Bethlehem, Pa. B2	\$54.00	\$54.50	\$55.00 58.78	\$55.50
NewYork, del.	£7 00	58.28	58.02	58.52
Newark, del	57.02 56.75	57.52 57.25	57.75	58.25
Philadelphia, del	96.79	01.20	01.10	00.40
Birmingham District				
AlabamaCity, Ala. R2	48.38	48.88		
Birmingham R2	48.38	48.88		* * * * *
Birmingham S9	48.38	48.88		4 + + + +
AlabamaCity,Ala. R2 Birmingham R2 Birmingham S9 Woodward,Ala. W15	48.38	48.88		
Cincinnati, del.		56.43		
Ruffalo District				
Ruffalo R2	52.00	52.50	53.00	
Buffalo H1	52.00	52.50	53.00	
Buffalo H1 Tonawanda, N.Y. W12 No Tonawanda, N.Y. T9	52.00	52.50	53.00	
No.Tonawanda, N.Y. T9		52.50	53.00	
Boston, del	62.65	63.15	63.65	
No. Tonawanda, N. Y. T9 Boston, del. Rochester, N. Y., del. Syracuse, N. Y., del.	55.02	55.5 2	56.02	
Syracuse, N.Y., del	56.12	56.62	57.12	
Chicago I-3	52.00	52.50	52.50	53.00
Gary, Ind. U5	52.00		52.50	
IndianaHarbor, Ind. I-2	52.00		52.50	
So.Chicago, Ill. W14	52.00	52.50	52.50	
So.Chicago, Ill. Y1	52.00	52.50	52.50	
So.Chicago,Ill. U5	52.00	54.67	52.50	53.00
Chicago I-3 Gary, Ind. U5 IndianaHarbor, Ind. I-2 So. Chicago, Ill. W14 So. Chicago, Ill. W1 So. Chicago, Ill. U5 Milwaukee, del. Muskegon, Mich., del.	54.17		54.67	55.17
Muskegon, Mich., del		58.80	58.80	
Cleveland District				
Cleveland A7	52.00	52.50	52.50	53.00
Cleveland R2	52.00	52.50	52.50	
Akron, O., del. from Cleve	54.61	55.11	55.11	55.61
Lorain,O. N3	52.00			53.00
Duluth I-3 Erie,Pa, I-3 Everett,Mass, E1 Fontana,Calif, K1			52,50	
Erie Pa I-3	52.00	52.50	52.50	53.00 (
Everett.Mass. E1		59.75	60.25	
Fontana.Calif. K1	58.00	58.50		
Seattle, Tacoma, Wash., del.		60.66		
		60.66		
LosAngeles, SanFrancisco, del. GraniteCity,III. G4 St.Louis, del. (inc. tax) Ironton,Utah. C11 Concern, Utah. C11	60.16	60.66		
GraniteCity,Ill. G4	53.90	54.40	54.90	
St.Louis, del. (inc. tax)	54.65	55.15	55.65	
Ironton, Utah C11	52.00	52.50		
Geneva, Utah C11 LoneStar, Tex. L6	52.00	52.50		
LoneStar, Tex. L6	48.00	*48.50	48.50	
Minnequa, Colo. C10	54.00	55.00	55.00	
Pittsburgh District				
NevilleIsland, Pa. P6		52.50	52.50	53.00
Pitts., N.&S. sides, Ambridge				
NevilleIsland,Pa. P6 Pitts., N.&S. sides, Ambridge Aliquippa, del.		53.87	53.87	54.37
		53.54	53.54	54.041
Lawrenceville, Homestead, Wilmerding, Monaca, del. Verona, Trafford, del. Brackenridge, del. Bessemer Pa U5				
Wilmerding, Monaca, del		54.16	54.16	54.66
Verona, Tranord, del		54.69	54.69	55.19
Brackenridge, del	52.00	54.95	54.95	55.451
Clairtan Pankin Sa Duguagna Da 115	52.00 52.00		52.50	53.00
Clairton, Rankin, So. Duquesne, Pa. U5 McKeesport, Pa. N3 Monessen, Pa. P7 Sharpsville, Pa. S6 Steelton, Pa. B2	52.00			53.00
Monessen Pa P7	54.00			
Chamavilla Do CC	01.00		FO FO	~
Steelton Do Do	54.00	54.50	52.50	53.00
Stredgland Do A?	54.00	54.50	55.00	55.5
Swedeland, Pa. A3	56.00 52.00	56.50 52.50	57.00 52.50	57.5 C
Cincinnati del	57.47	57.97	52.50	00.0 . (
Cincinnati, del	54.00	54.50	55.00	55.5
Youngstown District	52.00	01.00	30.00	00.0 (
Hubbard O V1	52.00	52.50	52.50	
Youngstown V1	52.00	52.50	52.50	
Hubbard, O. Y1 Youngstown Y1 Youngstown U5	52.00	02.00	02.00	53.0 0
Mansfield, O., del.	56.65	57.15	57.15	57.6
* Low phos, southern grade.				
	FFFAF	ALTERI		

PIG IRON DIFFERENTIAL

ilicon: Add 50 cents per ton for each 0.25% Si or percentage there over base grade, 1.75-2.25%, except on low phos fron on which bis 1.75-2.00%.

is 1.75-2.00%.
Phosphorus: Deduct 38 cents per ton for P content of 0.70% and over Manganese: Add 50 cents per ton for each 0.50% manganese over for portion therof.
Nickel: Under 0.50% no extra; 0.50-0.74%, incl., add \$2 per ton: 18 each additional 0.25%, add \$1 per ton.

BLAST FURNACE SILVERY PIG IRON, Gross Ton
(Base 6.0-6.50% silicon; add \$1.50 for each 0.5% Si)
Jackson,O. G2, J1
Buffalo H1

ELECTRIC FURNACE SILVERY PIG IRON, Gross Ton (Base 14.01-14.50% silicon; add \$1 for each 0.5% Si to 18%; each 0.5% Mn over 1%; \$1 for each 0.045% max, P) NiagaraFalls, N.Y. P15
Keokuk, Iowa, Openhearth & Fdry, frt. allowed K2
Keokuk, OH & Fdry., 12½ lb piglets, 16% Si, frt. allowed K2
Wenatchee, Wash, OH & Fdry., frt. allowed K2

CHARCOAL PIG IRON, Gross Ton

(Low phos semi-cold blast; differential charged for silicon over base grade; also for hard chilling iron Nos. 5 & 6)

Lyles, Tenn. T3

LOW PHOSPHORUS PIG IRON, Gross Ton Cleveland, intermediate, A7 Steelton,Pa. B2 Philadelphia delivered Trov. N.Y. R2

[†] Preliminary

Semifinished and Finished Steel Products

	Code numbers following mill	, 1952; cents per pound except points indicate producing comp	as otherwise noted. Changes pany: key on next two pages.	shown in italics.
INGOTS, Carbon, Forging (NT) Fontana, Calif. K1\$79.00	STRUCTURALS	PLATES, Carbon Steel	BARS & SMALL SHAPES, H.R.,	Cleveland R23.7
Munnaii, Pa. U5	Carbon Steel Stand. Shapes AlabamaCity, Ala. R23.60	AlabamaCity, Ala. R23.70 Aliquippa, Pa, J53.70	High-Strength Low-Alloy Aliquippa, Pa. J55.55	Emeryville, Calif. J74.4 Fairfield, Ala. T23.7
Seattle S2473.00 INGOTS, Alloy (NT)		Ashland, Ky. (15) A103.70	Bessemer, Ala. T25.55	Fontana Calif. K14.4
INGOTS, Alloy (NT) Detroit R7\$54.00 Fontana Calif. K1\$0.00	Bethlehem, Pa. B23.70	Bessemer, Ala. T23.70 Clairton, Pa. U53.70	Bethlehem, Pa. B25.55 Clairton, Pa. U55.55	Gary, Ind. U53.7 Houston S54.1
110uston 55	Wairfield the Tro our	Claymont, Del. C224.15 Cleveland J5, R23.70	Cleveland R25.55	Ind. Harbor, Ind. 1-2, Y1.3.7
Midland, Pa. C1854.00 Munhall, Pa. U554.00	Fontana. Calif. K14.25	Coatesville, Pa. L74.15	Fontana, Calif. K16.60	Johnstown, Pa. B23.7 Kansas City, Mo. S54.3
Seattle S2480.00	Geneva, Utah C113.65	Conshohocken, Pa. A34.15 Fairfield, Ala. T23.70		Lackawanna, N.Y. B23.7 Los Angeles B34.4
Carbon, Rerolling (NT)	Houston S54.05 Ind. Harbor, Ind. I-23.65	Fontana, Calif. (30) K1 4.30	IndianaHarbor, Ind. Y16.05 Johnstown, Pa. B25.55	Milton, Pa. B64.5
Bessemer, Pa. U5\$56.00 Clairton, Pa. U556.00	Johnstown, Pa. B23.70	Gary, Ind. U53.70 GraniteCity, Ill. G44.40	Lackawanna, N.Y. B25.55	Minnequa, Colo. C104.5 Niles, Calif. P15.0
Ensley, Ala. T2	Lackawanna, N.Y. B23.70	Geneva, Utah C113.70 Harrisburg, Pa. C56.30	Los Angeles B36.25 Pittsburgh J55.55	Pittsburg, Calif. C114.4 Pittsburgh J53.7
Fairfield, Ala. T2 56.00 Fontana, Calif. K1 75.00	Los Angeles B34.25 Minnequa, Colo, C104.10	Houston S54.10	Seattle B36.30 So.Duquesne,Pa, U55.55	Portland Oreg. 044.6
Gary, Ind. U5	Munhall.Pa. U5 3.65 Niles, Calif. (22) P1 4.85		So.SanFrancisco B36.30	SandSprings,Okla S54.6 Seattle B3, N144.4
Lackawanna N Y Rº 58 00	rhoenixville, Pa, P45.90	PRICE REVISIONS	Struthers, O. Y16.05 Youngstown U55.55	So. Chicago, Ill. R23.7
Munhall.Pa. U5	Portland. Oreg. 04 4.50 Seattle B3 4.30	Listed quotations are	BARS, Cold-Finished Carbon Ambridge.Pa. W184.55	So.Duquesne,Pa. U53.7 So.SanFrancisco B34.4
50. Duquesne, Pa. (5 56.00)	Seattle B3	those in effect prior to OPS' permission to raise	BeaverFalls, Pa. M12, R2 .4.55	SparrowsPoint, Md. B23.7 Struthers, O. Y13.7
Carbon, Forging (NT) Bessemer, Pa. U5\$66.00	Torrance, Calif. C114.25	prices retroactively to July 26. New price sched-	Euifalo B54.60 Camden, N.J. P135.00	Torrance, Calif. C114.4
Buffalo R2	Weirton, W. Va. W63.90 Alloy Stand. Shapes	ules are being prepared.	Carnegie, Pa. C124.55 Chicago W184.55	Youngstown R2, U53.7 BARS, Reinforcing
Clairton, Pa. U5 66.00	Clairton, Pa. U54.35	Increases average about 4.7 per cent,	Claveland A7 C20 4.55	(Fabricated: to Consumers
Cleveland R2	Fontana.Calif K15.55 Munhall.Pa, U54.35	To per conti	Detroit P174.70 Donora, Pa, A74.55	Johnstown, 4-1" B24.7
Detroit R769.00 Ensley Ala T2 86.00	So.Chicago, Ill. U54.35	Ind.Harbor,Ind. I-2 Y1.3.70	Elyria, O. WS4.55	
Ensley.Ala, T2 66.00 Fairfield.Ala, T2 66.00	H.S., L.A. Stand. Shapes Aliquippa Pa. J5 50	Johnstown, Pa. B23.70 Lackawanna, N.Y. B23.70	FranklinPark, Ill. N54.55 Gary, Ind. R24.55	Seattle B3, N145.5
Fontana.Calif. K1 \$5.00 Gary.Ind. U566.00	Aliquippa, Pa. J55.50 Bessemer, Ala. T25.50	Minnequa, Colo. C104.50	GreenBay, Wis. F74.55 Hammond, Ind. L2, M13.4.55	So.SanFrancisco B35.4 SparrowsPt. ¼-1" B24.7
Geneva, Utah C11 66.00 Houston S5	Bethlehem.Pa.(14) B25.50 Clairton.Pa, U55.50	Munhall, Pa. U53.70 Pittsburgh J53.70	Hartford, Conn. R25.10	Williamsport, Pa. S195.1
Johnstown Pa R2 66 00	Fairfield, Ala. T25.50 Fontana, Calif. K16.10	Seattle B34.60	Harvey, Ill. B5	SHEETS, Hot-Rolled Steel (18 gage and heavier)
Lackawanna.N.Y. B266.00 Los Angeles B3	Garv.Ind U5 5.50	Sharon, Pa. S33.95 So. Chicago, Ill, U5W143.70	Mansfield, Mass. B55.10 Massillon, O. R2, R84.55	AlabamaCity, Ala. R23.6
Munhall.Pa, U566.00	Geneva Utah C11 5.50 Ind Harbor, Ind I-2 5.50	SparrowsPoint,Md. B23.70 Steubenville,O. W103.70	Monaca, Pa. S174.55	Ashland, Ky. (8) A103.6 Butler, Pa. A103.6
So. Chicago R2, U5, W14, 66,00	Ind. Harbor. Ind. Y16.00	Warren, O. R23.70	Newark, N.J. W185.00 Plymouth, Mich. P54.80	Cleveland J5, R23.6 Conshohocken, Pa, A34.0
So.Duquesne.Pa. U566.00 So.SanFrancisco B355.00	Lackawanna, N. Y. (14) B2 5.50	Weirton, W. Va. W64.00 Youngstown R2, U5, Y1.3.70	Pittsburgh J54.55 Putnam, Conn. W185.10	Detroit M14.4
Alloy, Forging (NT) Bethlehem.Pa. B2\$70.00	LosAngeles B36.05 Munhall, Pa. U55.50	BARS, Hot-Rolled Carbon	Readville, Mass, C145.10	Ecorse, Mich. (8) G53.8 Fairfield, Ala. T23.6
Buffalo R2	Seattle B36.10 So.Chicago,Ill. U55.50	AlabamaCity, Ala. R23.70	St. Louis, Mo. M5 4.95 So. Chicago, Ill. W14 4.55	Fontana, Calif. K14.5
Canton.O. R270.00 Canton,O.(29) T766.00	So. SanFrancisco B36.00	Aliquippa, Pa. J53.70 Alton, Ill L14.15	SpringCity, Pa. (5) K3 5.00 Struthers, O. Y14.55	Gary, Ind. U53.6 Geneva, Utah C113.7
Conshohocken, Pa. A3 77.00	Struthers, O. Y16.00 Wide Flange	Atlanta, Ga. A114.25 Bessemer, Ala. T23.70	Waukegan, Ill. A74.55 Youngstown F3, Y14.55	GraniteCity, Ill. G44.3 Ind. Harbor, Ind. I-2, Y1.3.6
Fontana.Calif. K1 \$9.00	Bethlehem.Pa. B23.70	Buffalo R23.70	BARS, Cold-Finished Alloy	Irvin, Pa. U53.6
Gary.Ind. U570.00 Houston S578.00	Clairton.Pa. U5 3.65 Fontana.Calif. K14.65	Canton, O. R2		Lackawanna, N.Y. B23.6 Munhall, Pa. U53.6
Ind.Harbor.Ind. Y170.00 Johnstown.Pa. B270.00		Cleveland R23.70	Bethlehem.Pa. B25.40	Niles, O. N12
Lackawanna. N.Y. B2 70 00	So.Chicago, Ill. U53.65	Emeryville, Calif, J74.45	Buffalo B55.40 Camden, N.J. P135.80	Pittsburgh J53.6
Los Angeles B3	H.S., L.A. Wide Flonge Aliquippa.Pa, J55.50	Fairfield, Ala. T23.70 Fontana. Calif. K14.40	Canton O R2 540	Sharon Pa S34.0
Midland.Pa. C1870.00 Munhall.Pa. U570.00	Lackawanna.N.Y. B25.50	Gary Ind II5 3 70	Carnegie Pa C12 5.40	SparrowsPoint.Md. B2 .3.6
So.Chicago R2.U5.W14 70.00	So.Chicago,Ill. U55.45	Houston S5 4.10 Ind.Harbor,Ind. I-2, Y1.3.70	Cleveland A75.45	Torrance, Calif. C114.3
So. Duquesne. Pa. U5 70.00 Struthers. O. Y1 70.00	BEARING PILES	Johnstown, Pa. B23.70	Cleveland C205.40 Detroit P175.55	Warren, O. R23.6
Warren.O. C17 70.00	Munhall.Pa. U53.65 So.Chicago.Ill. U5 3.65	Lackawanna, N.Y. B23.70	Donora.Pa. A75.45	WestLeechburg, Pa. A4 3.7
ROUNDS, SEAMLESS TUBE (NT) Canton.O. R2 882.00	PLATES, High-Strength Low-Alloy	Los Angeles B34.40 Milton, Pa. B64.55	Elyria, O. W85.40 Gary, Ind. R25.40	Youngstown U5, Y13.6 SHEFTS H.R. (19 gage)
Cleveland R2 \$2.00 Fontana.Calif, K1 103.00	Aliquippa.Pa. J55.65 Bessemer.Ala, T25.65	Minnequa, Colo. C104.15	Hammond, Ind. L2, M13.5.40	AlabamaCity, Ala R24.
Gary.Ind U5 \$2.00	Claudand IS P2	N Tongwondo N V D11 2 70	Hartford, Conn. R25.85 Harvey, Ill. B55.40	Ind Harbor Ind I-2 5.4
Massillon, O. R2 \$2.00 So.Chicago, Ill. R2 \$2.00	Conshohocken, Pa. A35.90	Pittsburg, Calif. C114.40 Pittsburgh J53.70	Lackawanna, N.Y. B25.40	Mansfield, O. E65.6
So. Duque-ne.Pa. U5 \$2.00 SHEET BARS (NT)	Fairfield, Ala. T25.65 Fontana, Calif. (30) K1 6 25	Portland, Oreg. 044.65 Seattle B3, N144.45	Massillon, O. R2, R85.40	Torrance, Calif. C115.4
Fontana, Calif. K1 \$59.00	Gary.Ind. U5 5 65			
SKELP Aliquippa.Pa, J5\$3.45	Ind. Harbor, Ind. 1-25.65	So. Duquesne, Pa. U5 3.70 So. San Fran, Cal. B3 4.45	Newark, N.J. W185.75	Cleveland J5, R25.4
Munhall, Pa. U5	Johnstown, Pa. B2 5 65	Struthers.U. Yl	So. Chicago, III. R2. W14.5.40	Ecorse, witch Go
Youngstown R2, U53.35	Munhall.Pa. U5 5.65 Pittsburgh J55.65	Torrance, Calif. C114 40 Welrton, W.Va. W63.85	Struthers, O. Y15.40	Fairfield, Ala. T25.4
WIRE RODS	Seattle B3	Youngstown R2, U53.70	Waukegan, Ill. A75.45	Gary, Ind. U55.4
Alton, Ill. I.1	So. Chicago. III U5 5 65	DAKS, Hot-Kolled Alloy	Youngstown F3, Y15.40	Ind. Harbor, Ind 1-2 5.40 Ind. Harbor, Ind. Y1 5.90
Buffalo W124.10	SparrowsPoint, Md. B25.65 Warren.O. R25.65	Bethlehem, Pa, B24.30 Buffalo R24.30	RAIL STEEL BARS ChicagoHts.(3,4) C24.75	Irvin, Pa. U55.4
Cleveland A7 4.10 Donora,Pa, A7 4.10 Fairfield,Ala, T2 4.10	Youngstown Y16.15	Canton, O, R24.30	ChicagoHts. (3,4) I-24.75	Pittsburgh J55.4
Fontana, Calif. K1 4.90	PLATES, Open-Hearth Alloy	Canton, O. (29) T73 95 Clairton, Pa. U54.30	Franklin, Pa. (3,4) F54.75 FortWorth, Tex. (26) T44.85	Sharon, Pa. S35.4
Houston S5	Claymont, Del. C22 4 85 Coate-ville, Pa. L7 5 25	Names Mich (15 4.65	Huntngt, W. Va. (3) W7 5.80	SparrowsPoint(36) B25.4
Joliet, Ill. A74.10 Los Angeles B34.90	Conshohocken, Pa. A35 05 Fontana, Calif. K15.70	Dantung Colif Ltd 5-25	Marion.O.(3) P114.75 Moline,Ill.(3) R23.80	Warren, O. R25.4 Weirton, W. Va. W65.7
Minnegua. Colo. C104.35	Gary, Ind. U54.75 Johnstown, Pa. B24.75	TT CT 1.70	Tonawanda (3.4) B12 4.75	Youngstown U55.4
Monessen, Pa. P74.30 No. Tonawanda, N.Y. B11.4.10	Munhall.Pa, U5 4 75	Johnstown Pa R9 4 30	Williamsport(3) S195.00 Williamsport(4) S195.10	SHEETS, Cold-Rolled
Pittsburg, Calif. C114.75	Sharon, Pa. S35.20 So. Chicago, Ill. U54.75	KansasCity, Mo. S54.90 Lackawanna, N.Y. B21.30	BARS Wrought Iron	High-Strength Low-Allov
Pittsburg, Calif. C114.75 Portsmouth, O. P124.30 Roebling, N.J. R54.20	SparrowsPoint, Md. B2 .4.75	LosAngeles B35.35	Dover(Eng.Bolt) U113.50	Ecorse, Mich. G57.1
So.Chicago, Ill. R24.10 Sparrows Point, Md. B24.20	FLOOR PLATES Cleveland J5	Midland, Pa, C18 4.30	Dover(Wrght.Iron) U1 .12.25 Economy, Pa. (S.R.) B14.9.60	Gary, Ind. U56.6
Sterling, Ill. (1) N154.10	Cleveland J5 4.75 Conshohoeken,Pa, A3 4.75 Ind.Harbor,Ind, I-2 4.75	So.Chicago R2, U5, W14.4.30 So.Duquesne,Pa, U5 4.30	Economy, Pa. (D.R.) B14 11.90	IndianaHarbor, Ind. Y17.0
Struthers, O. Y14.10 Torrance, Calif. C114.90	Munhall, Pa. Up4.10	Struthers, O. Y14.30	McK. Rks. (Staybolt) L5 .14.50	Irvin, Pa. U56.5
Worcester, Mass. A74.40	So. Chicago, Ill. U54.75		McK.Rks.(S.R.) L59.60 McK.Rks.(D.R.) L513.00	
SHEET STEEL PILING Ind. Harbor, Ind. I-24.45	PLATES, Ingot Iron Ashland, c.l. (15) A103.95 Ashland, c.l. (15) A104.45	BAR SHAPES, Hot-Rolled Alloy	BARS, Reinforcing (Fabricators)	SparrowsPoint(38) B26.5
Ind. Harbor, Ind. I-24.45 Lackawanna, N.Y. B24.45 Munhall Pa II54.45	Ashland, c.l. (15) A104.45 Cleveland, c.l. R2	Gary, Ind. U54.55	AdamaCity, Ala. R23.70 Atlanta A114.25	Weirton, W. Va. W66.9
So.Chicago,Ill. U54.45	Cleveland, c.1. (13) A10	Youngstown U54.55	Buffalo R23.70	Youngstown Y17.0

C1 Calstrip Steel Corp.
C2 Calumet Steel Div.
Borg-Warner Corp.
C4 Carpenter Steel Co.
C5 Central Iron & Steel Div.
Barium Steel Corp.
C7 Cleve. Cold Rolling Mills
C8 Cold Metal Products Co.
C9 Colonial Steel Co.

H.R. or C.R. COILS AND
CUT LENGTHS, SILICON (22 Gα.)

Butler, Pa. A10 (C.R.)

Vandergrift, Pa. U5

12.90

13.75

14.75

15.25

F2 Firth Sterling Inc.
F3 Fitzsimons Steel Co.
F4 Follansbee Steel Corp.
F5 Franklin Steel Div.
Borg-Warner Corp.
F6 Fretz-Moon Tube Co.
F7 Ft. Howard Steel & Wire

K4 Keystone Steel & Wire
K2 Keystone Steel & Wire
Laclede Steel Co.
Lasalle Steel Co.
Latrobe Steel Co.
Lockhart Iron & Steel &
Lone Star Steel Co.
Likens Steel Co.

Deverand A	Atlanta A11 5.10 Alton,III. L1 5.05 Bartonville,III. (1) K4 4.85 Buffalo W12 4.85 Chicago W13 5.10 Cleveland A7, C20 4.85 Crawfordsville,Ind, M8, 5.10 Donora,Pa, A7 4.85 Duluth, Minn, A7 4.85 Fairfield,Ala, T2 4.85 Fostoria,O. (24) S1 5.35 Houston S5 5.25	Wire, MB Spring, High Carbon Aliquippa, Pa. J5 . 6.25 Alton, Ill. L1 . 6.45 Bartonville, Ill. (1) K4 . 6.25 Buffalo W12 . 6.25 Cleveland A7 . 6.25 Donora, Pa. A7 . 6.25 Johnstown, Pa. B2 . 6.25 Minbury, Mass. (12) N6 . 8.05 Monessen, Pa. P7, P16 . 6.25 Muncle, Ind. I-7 . 6.45 Palmer, Mass. W12 . 6.55 Muncle, Ind. I-7 . 6.45 Palmer, Mass. W12 . 6.55 Portsmouth, O. P12 . 6.25 So. Chicago, Ill. R2 . 6.25 Wire, Fine & Weaving (8"Coils) Bartonville, Ill. (1) K4 . 8.90 Worcester, Mass. J4 . 6.75 Wire, Fine & Weaving (8"Coils) Bartonville, Ill. (1) K4 . 8.90 Crawfordsville, Ind. M8 . 8.95 Fostoria, O. S1 . 8.90 Crawfordsville, Ind. M8 . 8.95 Fostoria, O. S1 . 8.90 Monessen, Pa. P16 . 8.90 Worcester, Mass. A7 . 76.92 Walkegan, Ill. A7 . 8.90 Worcester, Mass. A7 . 76.92 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Worcester, Mass. A7 . 76.92 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 8.90 Monessen, Pa. P16 . 9.20 Walkegan, Ill. A7 . 141 Carawfordsville, Ill. A9 . 141 Atlanta A11 . 144 Carawfordsville, Ill. A9 . 141 Constant, A7 . 14	Sterling, Ill. (1) N15	NAILS & STAPLES, Stock To declers & mfrs. (7) AlabamaCity, Ala. R.2
Jonnstown, Pa. B2 8.55 8.80 Monessen, Pa. P16 8.55 8.80 Monessen, Pa. P7 8.80 9.05 Muncie, Ind. I-7 8.75 9.05 Muncie, Ind. I-7 8.75 9.10 Parternouth, O.P12 8.55 8.80 Roebling, N.J. R5 8.85 9.10 SparrowsPt. B2 8.65 8.90 Struthers, O. Y1 8.55 8.80	Roebling, N.J., R5	Crawfordswife, ind., 345 Donora, Pa. A7 123 Duluth, Minn. A7 123 Fairfield, Ala. T2 123 Joliet, Ill. A7 123 Kansascity, Mo. S5 135 Kokomo, Ind. C16 125 Minnequa, Colo. C10 128 Fittsburg, Calif. C11 147 So. Chicago, Ill. R2 123 So. SanFran, Calif. C10 147	Pittsburgh O3, P149.85 Seattle B3	Johnstown, Pa. B25.60 Std. Std. Std. All 60 lb No. 1 No. 2 Under 3.60 3.50 3.55 4.00 3.60 3.50 3.55 4.00 3.60 3.50 3.55 5.00 3.60 3.50 3.55 (16) 4.00 3.60 3.50 3.55 (18) 4.00 3.60 3.50 3.50 4.00 3.60 3.50 3.50 4.75
(A) Plow and Mild Plow. (B) Improved Plow. Key to Producers It McLouth Steel Corp. It Mahoning Valley Steel E5 It Medart Co. It Mercer Tube & Mfg. Co. It Mid-States Steel & Wire It Mid-States Steel & Wire It Mid-States Steel & Co. It Moltrup Steel Products It Moltrup Steel Products It Moltrup Steel Co. It Moltrup Steel	SparrowsPt. B210.35 12.25 Waukegan A710.25 12.15 Under Steel Corp. SparrowsPt. B210.35 12.25 Under Steel Corp. Under Steel Corp. SparrowsPt. B210.35 12.25 Under Steel Corp. Under Steel Corp. Under Steel Corp. SparrowsPt. B210.35 12.25 Under Steel Corp. Under	SparrowsPoint, Md. B2 123 Sterling, Ill. (1) N15 123 2 Tenn. Coal & Iron Div. 3 Tenn. Prod. & Chem. 4 Texas Steel Co. 5 Thomas Steel Co. 6 Thompson Wire Co. 7 Timken Roller Bearing 9 Tonawanda Iron Div. Am. Rad. & Stan, San. 1 Ulster Iron Works 4 Universal Cyclops Steel 5 United States Steel Co.	TOOL STEEL Grade \$ per li Regular Carbon 0.23: Extra Carbon 0.27: Special Carbon 0.32: Oil Hardening 0.35: 5% Cr Hot Work 0.35: Hi-Carbon-Cr 0.63 Grade by Analysis W Cr V Co 18 4 1 1.5. 20.25 4.25 1.6 12.25 3.535-3.67 19 4 2 7 2.46 18.25 4.25 1.6 12.25 3.535-3.67 19 4 2 9 2.445-2.45 18.5 4 2 9 2.445-2.45 18.5 4 3 1.60 W Cr V Mo 6.4 4.5 19.5 5 0.96-0.96 6 4 3 6 1.19 1.5 4 1 8.5 0.81 Tool steel producers include A4, A8, B2, B8, C4, C9, C13 C18, D4, F2, J3, L3, M14, S8 U4, V2 and V3. Footnotes: (1) Chicago base, (2) Angles, flats, bands, (3) Merchant, (4) Reinforcing, (5) Philadelphia del. (6) Chicago or Birm. base, (7) To Jobbers, 3 cols, lower.	13) Add 0.50c for 17 Ga. & heavier. 14) Also wide flange beams. 15) 4/2" and thinner. 16) 40 lb and under. 17) Flats only. 18) To dealers. 19) Chicago & Pitts. base. 20) 0.25c off for untreated. 21) New Haven, Conn., base. 22) Del. San Francisco Bay area. 23) 28 Ga. 38" wide. 24) Deduct 0.20c, finer than 15 Ga. 25) Bar mill bands. 26) Reinforcing, mill lengths, to fabricators; to consumers, 5.60c. 28) Ronderized. 29) Subject to 10% increase. 20) (28) Sheared: add 0.35c for universal mill. 31) Not annealed.



A newspaper humorist some years ago "defended" the efficiency man, saying that he could probably do a job as well as the next man "if you gave him time to doodle a ream of blueprints."

Well, there's always time for a chuckle, even in a plant as big and busy as Sun Ship. But there's also appreciation of the part the draftsman's "doodles" play in the good old motto of *Plan Your Work—Work Your Plan*.

Many a time in Sun Ship's 36 years of growing, good drafting has been the key to special service for the company's customers. A clearance drawing has revealed a way of speeding shipment by a change of route. A print has shown that parts of a piece of equipment being rebuilt could be made right in Sun Ship's versatile plant... and save valuable time.

And of course, even routine operations of draftsmen fit right into Sun Ship teamwork... for the drawing is a translation of facts into language readable by workers... and the "doodles" of structure, fittings, wiring, etc. have put a feather in Sun Ship's cap by helping speed the building of many a machine that helped build a greater America.



SHIPBUILDING

& DRY DOCK COMPAN

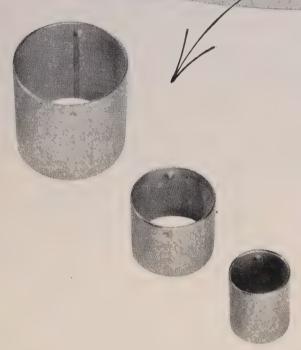
ON THE DELAWARE . CHESTER, PA.

25 BROADWAY . NEW YORK CITY

ITTIALD I	STAN		PIPE, T 8			BOLTS, NUTS	STAINLESS STEEL	METAL POWDERS
JTTWELD Size List	Pounds	Car Blo	load Discoul	nts from List, ——Galvan	% zed	CARRIAGE, MACHINE BOLTS (F.o.b. midwestern plants;	_	ire (Per pound, f.o.b. shipping
		A I	_	D E	F	per cent off list for less than	C.R. Str	point in ton lots for minus
½ 5.5c 6.0			2.0 3.5	+0.5 + 2.5 + 3.5 + 5.5		case lots to consumers 6 in, and shorter:	301 41.00 34.00 31	wise noted.)
% 6.0 ½ 8.5		23.5 21 36.0 34	.5	+10.0 + 12.	C	½-in. & smaller diam, 15	302 41.25 36.75 31	50 Sponge fron: Cents
34 11.5	1.18	39.0 37	.0 38.0	12.0 10. 16.0 14.		%-in. & %-in 18.5 %-in. and larger 17.5	303 43.25 40.25 34 304 43.25 38.75 33	Unannealed 14.50
17.0 4 23.0			0.5 40.5 0.0 41.0	19.5 17. 20.5 18.	5 18.5	Longer than 6 in.: All diams 14	309 56.00 55.00 44	
½ 27.5 37	2.78	42.5 40	.5 41.5	21.5 19.	5 20.5	Lag bolts, all diams.:	321 49.25 48.25 37	00 Electrolytic iron:
1/2 58.5	5.82		1.0 42.0 1.5 42.5	22.0 20. 23.0 21.		over 6 in. long 21	347 53.75 52.25 41 410 36.50 30.50 25	75 Unannealed (99 + %
76.5		43.5 41	.5 42.5	23.0 21.	0 22.0	Ribbed Necked Carriage 18.5	416 37.00 37.00 26 420 44.00 47.00 31	
a. 78 - 78	FO. Denv	wood, w	V8 334 1	on 3%", 4"; points lower	00 1/11	Plow 34	430 39.00 31.00 26	25 Fe (minus 325
							501 27.50 26.00 14 502 28.50 27.00 15	
" and %"	"; Wheat	land, Pa	. W9, 2 p	, 2 points lower	on 4".	Tire bolts 21	Balt., Types 301-347 she	
							except 303 and 309 E2.	97.9-99.8% size 5 to
1; Aliquipp	pa, Pa.	J5; Fon	tana, Cali	f. K1 quot	es 11½	H.P. & C.P. Reg. Hvy. Square:	Brackenridge, Pa., sheets quotes slight variations	**
1/2" and 4".	ULL 72 G	ind large	r continuou	is weld and	24% on	½-in. & smaller 15 15	Types 301-347. Bridgeville, Pa., bars, wi	Carlots, freight
olumns B &	& E: Spa	rrows Po	int, Md. B	2.		%-in1½-in 9 1	sheets & strip U4.	Atomized, 500 lb
Lary Dase	2 DOINE	s lower (liscount I.	i., Y1; Alt		1%-in. & larger 7.5 1 H.P. Hex.:	Butler, Pa., sheets and streexcept Types 303, 309, 4:	
olumn D:]	Butler, P	a. F6, 5	3-38"; Ben	wood, W. V	a. W10,	½-in. & smaller 26 22	420, 501 & 502, A10.	Antimony, 500 lb lots , 71.00
nd 15.5% o	on 3½",	4"; Share	on, Pa. M6	plus 2.5 o	on %"	%-in. & %-in 16.5 6.5 %-in1½-in 12 2	Carnegie, Pa., sheets a strip except Types 30	Drogg 20 top lotg 28 25-32 00
points lower	on 1/4",	%", 11/2	points low	er on 1" ar	nd 1¼",	\(\frac{1}{2} \cdot \) in, & smaller 26 22 \(\frac{1}{3} \cdot \) in, \(\frac{1}{2} \cdot \cdot \) in, \(\frac{1}{2} \cdot \) in, \(\frac{1}{2} \cdot \) in, \(\frac{1}{2} \cdot \) in \(\frac{1} \cdot \) in \(\frac{1}{2} \cdot \	416, 501 & 502 S18.	Bronze, 10-ton lots51.25-60.00
'9, add 2 p	points on	18", 14"	%", 1 pc	oint lower or	1 %", 2	C. P. Hex.: ½-in. & smaller 26 22	Cleveland, strip A7. Detroit, strip M1 quo	es Phosphor-Copper, 20-
14", 3". E	tna. Pa	1%", 2 N2 and	7, 1½ poi	nts lower o	n 1¼",	%-in. & %-in 23 17.5 %-in. & 1½-in. 19.5 12	34.00c on Type 301; 36.5 302; 38.50c, 304; 58.5	c, ton lots 50.00
note only o	on ½" ar	nd larger	: Lorain,	0. N3; You	ngstown	1%-in. & larger 12 6.5	316; 52.00c, 347; 30.5	c, Copper.
a. J5 quote	es 1 poin	and 4	on %". 2	town Y1, Al points lower	quippa,	SEMIFINISHED NUTS American Standard	410; 31.00c, 430. Dunkirk, N. Y., bars, w	re Reduced 34.75
16", 2", 13	% points	lower or	14, 24	points lower and 3".		(Per cent off list for less	A4 quotes slight variation	ns Lead 22.50
EAMLESS AN			Carload Di	iscounts from	List. %	than case or keg quantities) Reg. Hvy.	on Types 301-347. Duquesne, Pa., bars U5.	Magnesium75.00-85.00
LECTRIC WEL		unds Bl	Seamless	Elec	. Weld	½-in. & smaller 35 28.5	Fort Wayne, Ind., bars a wire, except Types 501	& Minus 100 mesh 57.00
			ack Gal		Galv. D	%-in. & %-in 29.5 22 %-in1½-in 24 15	502 J6 quotes slight var	a- Minus 35 mesh 52.00
			9.5 8.	0 29.5	8.0		tions on Types 301-347. Gary, Ind., sheets exce	Minus 200 mesh 62.00 pt Nickel unannealed 86.00
			2.5 11, 2.5 11,		11.5 11.5	7 -in, & smaller 35	Type 416 U5.	Nickel-Silver 5-ton lots 44.50
	2.0 9. 1.09 10.		4.5 13.	5 34.5	13.5	½-in. to %-in 28.5 ¾-in. to 1½-in 26	Harrison, N. J., strip a wire C18.	Silicon 38.50
1	1.48 14.	.81 3	7.0 16.		13.5 16.0	STEEL STOVE BOLTS	Massillon, O., all items, F McKeesport, Pa., strip, Ty	
	1.92 19. A: Aliqui	18 3	7.0 16.		16.0	(F.o.b. plant, per cent off list in packages)	410; bars & wire, Typ	es grainless Steel 302 83 00
oungstown	Y1.					Plain finish48 & 10	410 through 430 and 31.2 on Type 302, 33.75c	DC 72 40 t 1-t- 20 00 20 00
Column B:	: Aliquip	pa J5 qu orain N3	otes 1% pt	s lower on	2", 1 pt	Plated finishes31 & 10	303, 32.75c on 304, 48.7 on 316, 36.75c on 33	5c Tungsten Dollars
olumns C	& D: You	ungstown	R2.			HEXAGON CAP SCREWS (1020 steel; packaged: per	41.25c on 347 F2.	60 to 200 mesh:
						cent off list) 6 in, or shorter:	McKeesport, Pa., bars, she except Type 416 U5.	1000 lb and over 5.85
		BOILER	TUBES			%-in. & smaller 42	Middletown, O., sheets a	
Net base all thickness	c.l. price	s, dollar	s per 100	ft., mill; m	inimum	%-in, through 1 in 34 Longer than 6 in.:	strip except Types 303, 4 420, 501 and 502 A10.	99.9%, minus 200
.D.	B.W.	TO TO	amless—	merusive,	Weld	%-in. & smaller 26 %-in. through 1 in 4	Midland, sheets & strip C. Munhall, Pa., bars U5.	8. mesh 3.24 Chromium, electrolytic
1.	Ga.	H.R.	C.D.	H.R.	C.D.	SQUARE HEAD SET SCREWS	Muncie, Ind., wire I-7 quo	
34	13 13	13.45 16.09	16.47 19.71	15.36 15.61	15.36 18.19	(Packaged; per cent off list)	types 302, 304, 430. Pittsburgh, sheets C18.	
1/2	13	17.27	21.15	17.25	20.30	shorter 38	Reading, Pa., strip exce 34.25c on Type 301 a	METALLURGICAL COKE
** ******	13 13	19.29 21.62	23.62 26.48	19.62 21.99	23.09 25.86	1 in. and smaller diam. x over 6 in 26	56.00c on 309; bars, exce	pt Price net ton
4	13 12	24.35 26.92	29.82 32.97	24.50	28.84	HEADLESS SET SCREWS	31.50c on Type 301 a 45.25c on 309 C4,	BEEHIVE OVENS
1/2	12	29.65	36.32	26.98 29.57	31.76 34.76	(Packaged; per cent off list) No. 10 and smaller 35	Sharon, Pa., strip, exce Types 303, 309, 416, 50	pt Connellsvil.fur\$14.50-15.00
*	12 12	32.11 34.00	39.33 41.64	31.33 32.89	36.84 38.70	¼-in, diam, & larger 16	502 and 34.25c on Ty	1, Connellsvil.fdy16.50-17.50 Pe New River foundry 20.80
						N.F. thread, all diams. 10	301 S3. So. Chicago, Ill., bars	Wise county, foundry. 15.95 & Wise county, furnace. 15.20
		CLAD S	STEELS			RIVETS	structurals U5.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	(_	er pound)			F.o.b. midwestern plants Structural ½-in., larger 7.85c	Syracuse, N. Y., bars, w. & structurals C18.	OVEN FOUNDRY COKE
	- 1	Cold-R		Sheets-		$\frac{7}{16}$ -in. under 36 off	Titusville, Pa., bars U4. Wallingford, Conn., strip V	72 Kearney, N. J. ovens.\$22.75
	Plates -	Carbon	Base		Cu Base	WASHERS WROUGHT	quotes 0.25c higher,	Everett, Mass., ovens
adding Carl ainless 10%		10%	Both Ca Sides 10%	rbon Base 6 20%	Both Sides	WASHERS, WROUGHT F.o.b. shipping point, to job-	Washington, Pa., bars, shee & strip, except 0.25c hig	h- Chicago ovens 23.00
02			19.7	5 26.24-	77.00	bers-List to list-plus-\$1	er on Type 301 J3. Washington, Pa., Types 3	Chicago, del 24.50
)4 25.0	00 29.50		24.5	27.50 0 27.50-	77.00	FLUORSPAR	through 347 sheets & sti	ip Milwaukee, ovens 23.75
				27.77		Metallurgical grade f.o.b.	except 303, 309; 316 shee 62.00c, strip 64.00c W4	ts Indianapolis, ovens 22.75 Chicago, del 26.62
$09 \dots 30.5$	50 41.00				144.00	shipping point, in Ill., Ky.,	Watervliet, N. Y., structura	ls Cincinnati del 25.85
6 29.5			26.0			net tons, carloads, enective	& bars A4 quotes vari tions on Types 301-347.	Ironton O., ovens 22.50
7 34.5	39.00					CaF ₂ content 70%, \$43; 60%. \$40. Imported, net ton, duty paid,	Waukegan, bars & wire A West Leechburg, Pa., str	7. Cincinnati, del 25.12
99 5			23.0		111.00	metallurgical grade, \$33-\$35.	A4 quotes slight variation	ns Cleveland, del 25.82
8 33.5	38.00					ELECTRODES	on Types 301-347. Youngstown, strip exce	Erie, Pa., ovens 23.50
21 26.50	38.00 31.00- 32.00			0 22 50	120.00			biriningham, ovens 20.00 i
	38.00 31.00- 32.00		24.0	0 33.50- 33.83	130.00		Types 303, 309, 316, 41	6, Cincinnati, del 25.23
21 26.56 7 27.56 95 21.28	38.00 31.00- 32.00 32.00 32.75		24.0	33.83		(Threaded, with nipples, unboxed f.o.b, plant)	Types 303, 309, 316, 43 501 and 502 and 34.25c Type 301 C8.	Philadelphia, ovens 22.70 NevilleIsland, Pa., ovens 23.00
21 26.50 17 27.50 25 21.24 10 20.74 ickel . 33.55	38.00 31.00– 32.00 32.00 32.00 25 27.75 27.25 45.15	41.00	24.0	33.83		(Threaded, with nipples, unboxed f.o.b. plant) GRAPHITE	501 and 502 and 34.25c Type 301 C8.	Philadelphia, ovens 22.70 NevilleIsland,Pa.,ovens 23.00 Swedeland, Pa., ovens. 22.60 St. Louis, ovens
21 26.50 17 27.50 25 21.21 10 20.71 ickel . 33.51 iconel. 41.23	38.00 31.00– 32.00 32.00 32.00 25 27.75 27.25 45.15 3 54.18	• • • •	24.0 54.00	33.83		(Threaded, with nipples, unboxed f.o.b. plant) GRAPHITE Inches — Cents Diam, Length per lb	501 and 502 and 34.25c Type 301 C8.	Philadelphia, ovens 22.70 NevilleIsland,Pa.,ovens 23.00 Swedeland, Pa., ovens. 22.60 St. Louis, ovens
21 26.50 17 27.50 15 21.20 16 20.70 16 33.50 17 20.70 18 20.70 19 20.70 10	50 38.00 31.00— 32.00 50 32.00 55 27.75 5 27.25 54.18 46.28	41.00	24.0 54.00	33.83	165.00	(Threaded, with nipples, un- boxed f.o.b. plant) GRAPHITE	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove	nn Philadelphia, ovens 22.70 NevilleIsland.Pa., ovens 23.00 Swedeland, Pa., ovens 22.60 St. Louis, ovens St. Louis, del 25.40 Portsmouth, O., ovens 22.50 Cincinnati, del 25.12
21 26.50 27 27.50 25 21.21 20 20.71 ickel . 33.51 conel . 41.22 onel . 34.93 opper*	60 38.00 31.00– 32.00 60 32.00 25 27.75 5 27.25 54.18 3 46.28 ed. † 20.	41.00 3 23.70† 2 20c for	24.0 54.00 29.65‡ hot-rolled.	33.83 	165.00 or hot-	(Threaded, with nipples, unboxed f.o.b. plant) GRAPHIE Inches — Cents Diam. Length per lb 17,18,20 60,72 17.85 8 to 16 48,60,72 17.85 7 48,60 19,57	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove Pure benzol 30.00-35. Toluol, one deg 26.00-33.	March Marc
21	50 38.00 31.00— 32.00 50 32.00 55 27.75 75 27.25 545.15 3 54.18 13 46.28 	41.00 5 23.70† 2 20c for pints for nshohock	24.0 54.00 29.65‡ hot-rolled. carbon ba	33.83 20.20 20	165.00 or hot- Stain- Castle,	$ \begin{array}{c cccc} (Threaded, & with nipples, unboxed f.o.b. & plant) \\ \hline & & & & & & & \\ \hline & & & & & & & \\ \hline & & & &$	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove Pure benzol 30.00-35. Toluol, one deg 26.00-33. Industrial xylol 25.00-33.	March Marc
21	60 38.00 31.00– 32.00 60 32.00 75 27.75 75 27.25 75 45.15 75 45.15 75 46.28 75 40.28 76 40.28 77 40.28	41.00 a 23.70† 2 20c for pints for nshohock d plates,	54.00 54.00 29.65‡ hot-rolled. carbon ba en, Pa. A Claymont.	33.83 26.40c f se products: 3 and New Del. C22,	165.00 or hot- Stain- Castle, Coates-	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove Pure benzol 30.00-35. Toluol, one deg 26.00-33.	March Philadelphia, ovens 22.70
1	50 38.00 31.00– 32.00 32.00 50 32.00 55 27.75 55 27.25 55 45.15 23 54.18 33 46.28 cution position positio	41.00 : 23.70† : 20c for oints for nshohock d plates, Washingt	24.00	\$26.40c f se products: 3 and New, Del. C22, 3, rickel, copper-cla	or hot- Stain- Castle, Coates- inconel, d strip,	$ \begin{array}{c cccc} (Threaded, \ with \ nipples, \ unboxed \ f.o.b. \ plant) \\ \hline & GRAPHITE \\ \hline & Inches & Cents \\ Diam. & Length & per lb \\ 17,18,20 & 60,72 & 17.85 \\ 8 to 16 & 48.60,72 & 17.85 \\ 7 & 48.60 & 19.57 \\ 6 & 48.60 & 20.95 \\ \hline & CARBON \\ 35,40 & 110 & 8.03 \\ 30 & 65,84,110 & 8.03 \\ \hline \end{array} $	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove Pure benzol30.00-35. Toluol, one deg26.00-33. Industrial xylol25.00-33. Per ton bulk ovens Sulphate of ammonia .\$32-\$ Cents per pound, ovens	Medical Philadel Ph
1	38.00 31.00- 32.00 3	41.00 : 23.70† : 20c for oints for nshohock d plates, Washingt	24.00	\$ 26.40c f se products: 3 and New Del. C22, 3; nickel,	or hot- Stain- Castle, Coates- inconel, d strip,	$ \begin{array}{c cccc} (Threaded, \ with \ nipples, \ unboxed \ f.o.b. \ plant) \\ \hline & GRAPHITE \\ \hline & Inches & Cents \\ Diam. & Length & per lb \\ 17,18,20 & 60,72 & 17.85 \\ 8 to 16 & 48.60,72 & 17.85 \\ 7 & 48.60 & 19.57 \\ 6 & 48.60 & 20.95 \\ \hline & CARBON \\ 35,40 & 110 & 8.03 \\ 30 & 65,84,110 & 8.03 \\ \hline \end{array} $	501 and 502 and 34.25c Type 301 C8. COAL CHEMICALS Spot, cents per gallon, ove Pure benzol30.00-35. Toluol, one deg26.00-33. Industrial xylol25.00-33. Per ton bulk ovens Sulphate of ammonia. \$32-\$	NevilleIsland.Pa., ovens 22.70

ugust 11, 1952

Dentists Can Tell You Why Stainless Tubing for <u>These</u>



Dental molding flasks and saliva ejector stand up under constant use, because they are made from Carpenter Stainless Tubing. The flasks withstand temperatures up to 1700° F., while the ejector is frequently sterilized.

Fabricators can tell you why it's easy to work with Carpenter Stainless Tubing!

Reports from dozens of experienced fabricators tell u that there are two reasons why it's easy to work with this tubing. First, analysis-tolerance-finish (and special such as hardness) are always just the way you wan them. That eliminates a lot of problems at the start cany job. Second, they tell us that the personal help the can get on any Stainless Tubing job helps to keep uncosts as low as possible.

When you want to discuss your design or fabricating problems, call your nearest Carpenter Stainless Tubing Distributor. He will be glad to put his experience to work on your essential jobs, and to help you plan for the future, too.



THE CARPENTER STEEL COMPANY Alloy Tube Division, Union, N.

Export Dept.: The Carpenter Steel Company

Export Dept.: The Carpenter Steel Compar Port Washington, N. Y.—"CARSTEELCO"

Carpenter



THE U.S.

NEEDS YOUR

STEEL SCRAP

NOW

- Analysis - Tolerance - Finish -

-guaranteed on every shipmen

WAREHOUSE STEEL PRODUCTS

(Representative prices, cents per pound, for delivery within switching limits, subject to extras.)

		-SHEETS					BARS		Standard		
	H.R. 18 Ga.,		Gal.	ST				H.R. Alloy	Structural	PLAT	
ATomo Trans. 1 11	Heavier*	C.R.	10 Ga.†	H.R.*	C.R.*	H.R. Rds.	C.F. Rds.	4140†† ⁵	Shapes	Carbon	Floor
New York (city)	.6.28	7.24	8.37	6.50		6.52	7.33	9.29§	6.38	6.74	8.01
JerseyCty(c'try)	6.09	6.94	8.12	6.36		6.22	7.03	8.99§	6.08	6.46	7.71
Boston (city) Boston (c'try)	6.45 6.25	7.23 7.03	8.39 8.19	6.40 6.20		6.30 6.10	6.82‡ 6.61‡	10.80§ 10.60§	6.45 6.25	6.65 6.45	$7.89 \\ 7.69$
Phila. (city) Phila. (c'try)	6.09 5.84	7.05 6.80	8.20 7.95	6.29 6.04	7.29 6.94	6.35 6.10	7.19 6.94	10.50 § 10.25 §	6.11 5.86	6.38 6.13	7.33 7.08
Balt. (city) Balt. (c'try)	5.74 5.54	7.04 6.84	8.22 8.02	6.27 6.07		$6.25 \\ 6.05$. 6.87‡ 6.67‡	* * *	6.37 6.17	6.33 6.13	7.61 7.41
Norfolk, Va	6.78					6.04	7.30		6.30	6.30	7.15
Richmond, Va	5.74	6.57	8.38	6.14		. 5.91	6.59		6.72	6.86	8.00
Wash. (w'hse) .	6.05	7.26	8.49	6.50		6.50	7.26		6,60	6.65	7.86
Buffalo (del.) Buffalo (w'hse).	5.74 5.54	6.52 6.32	8.26 8.06	6.06 5.86		5.72 5.52	6.65‡ 6.45‡	10.72 10.52	6.02 5.82	6.18 5.98	7.55 7.35
Pitts, (w'hse)	5.54	6.32	7.65	5.59	6.90	5.47	6.15	10.10	5.65	5.65	6.89
Detroit (w'hse).	5.74	6.49	7.96	5.78	7.15	5.76	6.60	10.37	6.12	6.17	7.23
Cleveland (del.) Cleve, (w'hse).	5.74 5.54	6.52 6.32	7.96 7.76	5.85 5.65	7.14 6.94	5.81 5.61	6,35‡ 6,15‡	10.41 10.21	6.15 5.95	6.02 5.82	7.39 7.19
Cincin. (w'hse).	5.87	6.39	8.12	5.79		5.77	6.66	10.52	6.12	6.17	7.31
Chicago (city) Chicago (w'hse)	5.74 5.54	6.52 6.32	7.85 7.65	5.69 5.49		5.67 5.47	6.25‡ 6.05‡	10.30 10.10	5.85 5.65	5.85 5.65	7.09 6.89
Milwau, (city). Milwau, (c'try).	5.90 5.70	6,68 6.48	8.01 7.81	5.85 5.65		5.83 5.63	6.51‡ 6.31‡	10.37 10.17	6.01 5.81	6.01 5.81	7.25 7.05
St. Louis (del.) St. L. (w'hse).	6.04 5.84	6.80 6.60	8.15 7.95	5.99 5.79	* * *	5.97 5.77	6.65‡ 6.45‡ }	10.60 10.40	6.25 6.05	6.25 6.05	7.49 7.29
Kans. City (city) Kans. Cty (w'hse)	6.40 6.20	7.20 7.00	8.40 8.20	6.35 6.15		6.35 ° 6.15	7.20 7.00	• • •	6.50 6.30	6.60 6.40	7.80 7.60
Birm'hm (city). Birm'hm(w'hse)	5.75 5.60	6.55 6.40	6.90^{2} 6.75^{2}	5.70 5.55		5.70 5.55	7.53 7.53		5.85 5.70	$6.10 \\ 5.95$	8.23 8.23
Los Ang. (city). L. A. (w'hse)	6.55 6.35	8.35 ³ 8.15 ³	9.45 9.25	6.60 6.40	$10.75 \\ 10.55$	6.45 6.25	8.35 8.15	11.80 11.60	6.50 6.30	6.70 6.50	8.80 8.60
Seattle-Tacoma.	7.16	8.38	9.45	7.25		7.08	8.86	10.35§	6.52	6.89	8.73
SanFran. (w'hse)	6.64	7.883	9,103	6.42		6.32	8.20	11.30§	6.30	6.43	8.50

* Prices do not include gage extras; † prices include gage and coating extras, except Birmingham (coating extra excluded) and Los Angeles (gage extra excluded); ‡ add 25-cent special bar quality extra; § as rolled; †† as annealed. Base quantities, 2000 to 9999 lb except as noted. Cold-rolled strip, 2000 lb and over; cold-finished bars, 2000 lb and over; 2—500 to 1499 lb; 3—450 to 1499 lb.; 5—1000 to 1999 lb.

Ores

Lake Superior Iron Ore (1952 prices not established; 1951 contract prices follow.)

Gross ton, 51½% (natural), lower lake ports.
After adjustment for analysis, prices will be increased or decreased as the case may be for increases or decreases after Dec. 2, 1950, in applicable lake vessel rates, upper lake rail, freights, dock handling charges and taxes thereon.

Old	range	bessem	er			٠	 				a	٠	\$8.70
Old	range	nonbess	em	er			 			۵	٠		8.55
Mesa	abi bes	semer					 			۰			8.45
Mesa	abi nor	bessem	er										8.30
High	phosp	horus				D	 						8.30

Eastern Local Ore
Cents per unit del., E. Pa.
Foundry and basic 56-62% concentrates
contract

Tungsten Ore
Net ton unit, duty paid
Foreign wolframite and scheelite, per ton unit Domestic scheelite, mines

Manganese Ore
Manganese, 48% nearby, \$1.18-1.22 per long
ton unit, c.l.f. U. S. ports, duty for buyer's
account; shipments against old contracts for
48% ore are being received from some sources

Gross ton, f.o.b. cars, New York, Philadelphia, Baltimore, Charleston, S. C., plus ocean freight differential for delivery to Portland, Oreg., or Tacoma, Wash. Indian and African

 South African Transvaal

 44% no ratio
 \$27.00-28.00

 48% no ratio
 34.00-35.00
 Brazilian

44% 25:1 lump nom. Rhodesian

MANGANESE ALLOYS

Spiegeleisen: (19-21% Mn, 1-3% Sl). Carlot per gross ton, \$75, Palmerton, Pa.; \$75, Pittsburgh and Chicago; (16% to 19% Mn) \$1 per ton lower.

ton lower, Standard Ferromanganese: (Mn 78-82%. C 7% approx.) Carload, lump, bulk \$225 per gross ton of alloy, c.l. packed \$237; gross ton lots, packed \$252; less gross ton lots, packed \$269; f.o.b. Alloy, W. Va., Niagara Falls, N. Y., Ashtabula, or Marietta, O. Base price: \$227, Johnstown, Pa.; \$225, Sheridan, Pa., Lynchburg, Va.; \$228, Etna, Pa.; \$226, Anaconda Mont.

\$227. Johnstown, Pa.; \$225, Sheridan, Pa., Lynchburg, Va.; \$228, Etna, Pa.; \$226, Anaconda, Mont.

Shipment from Pacific Coast warehouses by one seller, add \$33 to above prices f.o.b. Los Angeles, Oakland, Portland, Oreg. Shipment from Chicago warehouse, ton lots \$267; less gross ton lots, \$284, f.o.b. Chicago. Add or subtract \$2.30 for each 1% or fraction thereof, of contained manganese over 82% and under 78%, respectively.

Low-Carbon Ferromanganese, Regular Grade: (Mn 85-90%). Carload, lump, bulk, max. (1.07% C, 27.95c per lb of contained Mn, carload packed 28.7c. ton lots 29.8c. less ton 31.0c. Delivered. Deduct 0.5c for max, 0.15% C grade from above prices, 1c for max, 0.30% C, 1.5c for max 0.50% C, and 4.5c for max 75% C—max 7% Si. Special Grade: (Mn 90% min, C 0.07% max, P 0.06% max). Add 0.5c to above prices. Spot, add 0.25c. Medium-Carbon Ferromanganese: (Mn 80-85%, C 1.5% max). Carload, lump, bulk 21.35c per lb of contained Mn, carload packed 22.1c, ton lot 23.2c, less ton 24.4c. Delivered. Spot, add 0.25c. Manganese metal, 2" x D (Mn 96% min).

add 0.25c.

Manganese metal, 2" x D (Mn 96% min, Fe 2% max, Sl 1% max, C 0.2% max): Carload, lump, bulk, 36.2c per lb of metal; packed, 36.95c; ton lot 38.45c; less ton lots 40.45c. Delivered. Spot, add 2c.

Manganese, Electrolytic: 40,000 lb or more, 28c; 2000 to 39.999 lb, 30c; 250 to 1999 lb, 32c. Premium for hydrogen-removed metal, 1.5c per pound, f.o.b. cars Knoxville, Tenn. Freight allowed to St. Louis or to any point east of Mississippi.

Silicomanganese: (Mn. 65.48%)

Mississippi.

Silicomanganese: (Mn 65-68%). Contract, lump, bulk, 1.50% C grade, 18-20% Si 11.4c per lb of alloy, carload packed, 12.15c, ton lots 13.05c, less ton 14.05c. Freight allowed. For 2% C grade, Si 15-17%, deduct 0.2c from above prices. For 3% C grade, Si 12-14.5%, deduct 0.5c from above prices, Spot, add 0.25c.

SILICON ALLOYS

25.30% Ferrosilicon: Contract, carload, lump, bulk, 20.00c per lb of contained Si; packed 21.40c; ton lot 22.50c, f.o.b. Niagara Falls, freight not exceeding St. Louis rate allowed. 50% Ferrosilicon: Contract, carload, lump, bulk, 12.40c per lb of contained Si, carload packed 14.0c ton lot 15.45c, less ton 17.1c.

packed 14.0c, ton lot 15.45c, less ton 17.1c. Delivered. Spot, add 0.45c

Low-Aluminum 50% Ferrosilicon: (Al 0.40% max.) Add 1.3c to 50% Ferrosilicon prices.
75% Ferrosilicon: Contract, carload, lump, bulk, 14.3c per lb of contained Si, carload packed 15.6c, ton lot 16.75c, less ton 18.0c. Delivered. Spot, add 0.8c.

Delivered. Spot, add 0.8c.

Delivered. Spot, add 0.25c.
Delivered. Spot, add 0.25c.
Delivered. Spot, add 0.25c.
Delivered. Spot, add 0.25c.
Silicon Metal: (Min 97% Si and 1% max Fe). C.1, lump, bulk, regular 18.5c per lb of Si, c.1. packed 19.7c, ton lot 20.6c, less ton 21.6c. Add 0.5c for max. 0.10% calcium grade. Deduct 0.5c for max 2% Fe grade analyzing min 96% Si. Spot, add 0.25c.

Alsifer: (Approx. 20% Al. 40% Si, 40% Fe.) Contract, basis f.o.b. Niagara Falls, N. Y., lump, carload, bulk, 9.90c per lb of alloy, ton lots packed 11.30c, 200 to 1999 lb 11.65c, smaller lots 12.15c.

BRIQUETTED ALLOYS

Chromium Briquets: (Weighing approx. 3% lb each and containing exactly 2 lb of Cr). Contract, carload, bulk, 14.50c per lb of briquet, carload packed 15.2c, ton 16.0c, less ton 16.9c. Deld. Add 0.25c for notching. Spot, add 0.25c.

Deld, Add 0.25c for hoteling, 27-, Ferromanganese Briquets: (Weighing approx. a lb and containing exactly 2 lb of Mn). Contract, carload, bulk 12.45c per lb of briquet c.l. packaged 13.25c, ton lot 14.05c, less tor 14.95c. Delivered, Add 0.25c for notching Spot, add 0.25c.

Spot, and 0.25c.

Silicomanganese Briquets: (Weighing approx. 3½ lb and containing exactly 2 lb of Mn and approx. ½ lb of Si). Contract, c.l. bulk 12.65c, per lb of briquet, c.l. packed 13.45c, ton lot 14.25c, less ton 15.15c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

0.25c for hotelmis. Spot, add o.25c.

Silicon Briquets: (Large size — weighing approx. 5 lb and containing exactly 2 lb of Si).

Contract, carload, bulk 6.95c per lb of briquet, c.l. packed 7.75c, ton lot 8.85c, less ton 9.45c.

Delivered. Spot, add 0.25c.

Somitive of the containing exactly 1 lb of Si). Carload, bulk 7.1c, c.l. packed 7.9c, ton lot 8.7c, less ton 9.6c. Delivered, Add 0.25c for notching, small size only. Spot, add 0.25c.

Molybdic-Oxide Briquets: (Containing 2½ lb of Mo each) \$1.14 per pound of Mo contained, f.o.b. Langeloth, Pa.

Note: Current prices on zirconium, calcium alloys appeared on page 173, Aug. 4 issue; titanium and "other" ferroalloys, page 125, July 28. Refractories prices were published on page 173, Aug. 4. Chromium, vanadium, boron and tungsten alloys, page 161, July 21.

CEILING PRICES, IRON AND STEEL SCRAP

Prices as set forth in Office of Price Stabilization ceiling price regulation No. 5, as amended Feb. 5, 1952.

STEELMAKING SCRAP COMPOSITE

Aug.	7						\$43.00
July	31 .						43.00
July	1952						42.60
Aug.,	1951						44.00
Aug.,	1947					٠	39.00

Based on No. 1 heavy melting grade at Pittsburgh, Chicago and eastern Pennsylvania.

Basing point ceiling prices per gross ton from which maximum shipping prices are computed on scrap of dealer and industrial origin; and from which ceiling on-line and ceil-ing delivered prices are computed on scrap of railroad origin.

on scrap or ramoad	origin.	
Grade 1 BasingPoint	No. 1 Bundles Dealer, Indus- trial	
Alabama City, Ala	\$39.00	\$41,00
Ashland, Ky	42.00	44.00
Atlanta, Ga	39.00	41.00
Bethlehem, Pa	42.00	44.00
Birmingham, Ala.	39.00	41.00
Brackenridge, Pa.	44.00	46.00
Buffalo, N. Y	43.00	45.00
Butler Pa	44.00	46.00
Butler, Pa Canton, O	44.00	46.00
Chicago, Ill.	42.50	44.50
Cincinnati, O	43.00	45.00
Claymont, Del	42.50	44.50
Claymont, Del Cleveland, O	43.00	45,00
Coatesville, Pa	42.50	44.50
Conshohocken, Pa	42.50	44.50
Detroit. Mich	41.15	43.15
Detroit, Mich Duluth, Minn	40.00	42.00
Harrisburg, Pa	42.50	44.50
Houston, Tex	37.00	39.00
Johnstown, Pa	44.00	46.00
Kansas City, Mo	39.50	41.50
Kokomo, Ind	42.00	44.00
Los Angeles	35.00	37.00
Middletown, O	43.00	45.00
Midland, Pa	44.00	46.00
Minnequa, Colo	38.00	40.00
Monessen, Pa	44.00	46.00
Phoenixville, Pa	42.50	44.50
Pittsburg, Calif	35.00	37.00
Pittsburgh, Pa	44.00	46.00
Portland, Oreg	35.00	37.00
Portsmouth, O	42.00	44.00
St. Louis, Mo	41.00	43.00
San Francisco	35.00	37.00
Seattle, Wash	35.00	37.00
Seattle, Wash Sharon, Pa Sparrows Pt., Md.	44.00	46.00
Sparrows Pt., Md	42.00	44.00
Steubenville, O	44.00	46.00
Warren, O Weirton, W. Va	44.00	46.00
Weirton, W. Va	44.00	46.00
Youngstown, O	44.00	46.00

Differentials from Base

Differentials per gross ton for other grades of dealer and industrial

O-H and Blast Furnace Grade 2. No. 1 Busheling Base

٥.	No. 1 Heavy Melting\$1.00
4.	No. 2 Heavy Melting 1.00
5.	No. 2 Bundles 1.00
6.	Machine Shop Turnings10.00
7.	Mixed Borings and Short
	Turnings and Short
0	Turnings 6.00
0.	Shoveling Turnings 6.00
10	No. 2 Busheling — 4.00
TO.	Cast Iron Borings 6.00
_	-
J.	dec. Furnace and Fdry. Grades
11.	Billet, Bloom & Forge
	Crops + 7.50
12.	Bar Crops & Plate + 5.00
12. 13.	Bar Crops & Plate + 5.00 Cast Steel
12. 13. 14.	Crops
12. 13. 14.	Crops
12. 13. 14.	Crops + 7.50 Bar Crops & Plate + 5.00 Cast Steel + 5.00 Punchings & Plate Scrap + 2.50 Electric Furnace Bundles + 2.00
12. 13. 14.	Crops + 7.50 Bar Crops & Plate + 5.00 Cast Steel + 5.00 Punchings & Plate Scrap + 2.50 Electric Furnace Bundles + 2.00
12. 13. 14. 15.	Crops
12. 13. 14. 15.	Crops + 7.50 Bar Crops & Plate + 5.00 Cast Steel + 5.00 Punchings & Plate Scrap + 2.50 Electric Furnace Bundles + 2.00 Cut Structurals & Plate: 3 feet and under + 3.00
12. 13. 14. 15.	Crops

1 foot and under ... + 6.00
Briquetted Cast Iron
Borings Base

2 feet and under Base 1 foot and under + 2.00

Foundry, Steel:

Unprepared Grades

When compressed const	itutes:
32. No. 1 Bundles	— 6.00
33. No. 2 Bundles	9.00
34. Other than material sui	t-
able for hydraulic co	m
pression	8.00

Restrictions on Use

- (1) Prices for Grades 11 and 23 may be charged only when shipped to a consumer directly from an industrial producer; otherwise ceiling prices shall not exceed prices established for grades 12 and 8, respectively.
- (2) Prices established for Grades 26 and 27 may be charged only when sold for use for chemical or annealfor the for chemical or anneal-ing purposes, and in the case of Grade 2*i*, for briquetting and direct charge into an electric furnace; otherwise ceiling prices shall not ex-ceed price established for Grade 10.
- (3) Prices established for Grade 28 may be charged only when sold to a producer of wrought iron; otherwise ceiling price shall not exceed ceiling price for corresponding grade of basic open-hearth.
- (4) Premiums for Grades 11-18. (4) Premiums for Grades 11-18, 20 and 21 may be charged only when sold for use in electric and acid open-hearth furnaces or foundries; or in basic O-H or blast furnace under NPA allocation or OPS authorical in the state of the thorization.
- (5) Prices for Grade 29 may be charged only when sold for forging or rerolling purposes.

Differentials from Base

Differentials per gross ton above or below the price of Grade 1 (No. 1 railroad heavy melting steel) for other grades of railroad steel scrap:

2 No 2 Heavy Malting

Z	. No. 2 Heavy Melting		
	Steel	-	-\$2.00
3	No. 2 Steel Wheel		Base
1	. Hollow Bored Axles and		20000
x	The same of the contract of the same of		
	loco. axles with keyways		_
	between the wheelseats. No. 1 Busheling		Base
5.	No. 1 Busheling	-	-3.50
6.	No. 1 Turnings		- 3 00
7	No 2 Turnings Drill-		0,00
	inge & Parings, Dilli-		10 00
	Mes & Bornigs		12.00
8.	No. 1 Turnings No. 2 Turnings, Drillings & Borings No. 2 Cast Steel and		
	uncut wheelcenters Uncut Frogs, Switches.		- 6.00
9,	. Uncut Frogs, Switches.		Base
0.	. Flues, Tubes & Pipes		8.00
1.	Structural, Wrought Iron		
	and/or/steel, uncut		6.00
2.	Destroyed Steel Cars		8.00
3.	Destroyed Steel Cars		. 0.00
		_	9.50
4.			
	Lengths	+	2.00
5.	Rerolling Rails	+	7.00
	Cut Rails:		
6,		-la	5.00
7.	3 feet and under 2 feet and under	-	5.00 6.00
8.	10 inches and under	T	0.00
		+	8.00
9.		+	3.00
0.	Uncut Tires		2.00
1.	Cut Tires	+	5.00
	Bolsters & Side Frames:		
2.	Uncut		Base
3,	Cut		3.00
1.	Angles Chlica Dong	7	3.00
.,	Cut		- 00
5.			5.00
	Solid Steel Axles	+	12.00
3.	Solid Steel Axles Steel Wheels, No. 3.		
	oversize		Base
7.	Steel Wheels, No. 3	+	5.00
3.	Spring Steel		5.00
},	Couplers & Knuckles		5.00
i.	Wrought Iron	7	5.00 8.00
	Firehoves		8.00
٠	Fireboxes	_	8.00 6.00
	Boilers		6.00
	No. 2 Sheet Scrap	-]	13.00
	Carsides, Doors, Car		
	Ends, cut apart	-	6.00
	Ends, cut apart Unassorted Iron & Steel -		6.00
	Unprepared scrap, not		0.00
	suitable for budnessi-		
	suitable for hydraulic		0.0-
	compression	_	8 00

Preparation Charges
Ceiling fees per gross ton which
may be charged for intransit preparation of any grade of steel scrap
of dealer or industrial origin, authorized by OPS are:
(1) For preparing into Grades No.
3, No. 4 or No. 2, \$5.
(2) For hydraulically compressing
Grade No. 1, \$6 per ton;
Grade No. 5, \$8.
(3) For crushing Grade No. 6, \$3.
For preparing into:

- (3) For crushing Grade No. 6, \$3.
 For preparing into:
 (4) Grade No. 25, \$6.
 (5) Grade No. 19, \$6.
 (6) Grades No. 12, No. 13, No. 14,
 No. 16, or No. 20, \$10.
 (7) Grade No. 17 or No. 21, \$11.
 (8) Grade No. 18, \$12.
 (9) For hydraulically compressing
 Grade No. 15, \$8.
 (10) For preparing into Grade No.
 28, \$10.
- (10) For pres 28, \$10.

Ceiling fees per gross ton which may be charged for intransit preparation of any grade of steel scrap of railroad origin shall be:
(1) For preparing into Grade No. 1 and Grade No. 2, \$8.
(2) For hydraulically compressing Grade No. 13, \$6.

For preparing into:

(3) Grade No. 16, \$4. (4) Grade No. 17, \$5. (5) Grade No. 18, \$7. (6) Grade No. 21, \$4. (7) Grade No. 23, \$4.

(1) Grade No. 23, \$4.

Ceiling fees per gross ton which may be charged for intransit preparation of east iron are limited to:
(1) For preparing Grade No. 8 into Grade No. 7, \$9.
(2) For preparing Grade No. 3 into Grade No. 11, \$7.
(3) For preparing Grade No. 3 into Grade No. 1, \$4.

CAST IRON SCRAP

Ceiling price per gross ton for fol-lowing grades shall be f.o.b, shiplowing grades ping point: Cast Iron:

11. Drop broken machinery. 52.00

OPEN MARKET

(Delivered prices include broker's commission. Asterisk [*] denotes nominal price.)

Birmingham

\$42.00						
37.00						
39.00-40.00						
36.00-37.00						
42.00-43.00						
35.00-36.00						
Boston						

(F.o.b. shipping point)

No. 1 cupola cast	40.00
Heavy breakable	36.00
Stove plate	34.00-35.00
Unstripped motor blocks	30.00

Buffalo (Delivered)

TAO.	Ŧ	neavy	me.	lting		-37.00
		heavy				37.00
No.	1	bundle	S .			38.00
No.	1	bushelin	g .			38.00
No.	2	bundles				37.00
Mach	nir	ne shop	tu	rning	S.	27.00
Mixe	d	borings	s, ti	urnin	gs	31.00
Cast	î	ron bor	ings			31.00
Short	t	shovelin	g ti	ırnin	gs	31.00
No.	1	cupola	cast		.41.00	-42.00°
No. 1	1	machine	rv	cast.	.42.00	-43.00°

Chicago

(Delivered)	
No. 2 heavy melting	42.50
No. 2 bundles	42.50
Machine shop turnings.	33.50
Mixed borings, turnings	37.50
Shoveling turnings	37.50
Cast iron borings	37.50
No. 1 cupola cast	48.00-49.00
Charging box cast	47.00-48.00
Heavy breakable	46.00-47.00
Burnt cast	40.00-41.00

Cast iron brake shoes Stove plate Clean auto cast Uns.ripped motor blocks Malleable Drop broken machinery	40.00-41.00 43.00-44.00 50.00-52.00 36.00-37.00 60.00-61.00 51.00-52.00
Cleveland	
(Delivered)	
No. 1 heavy melting	43.00
No. 2 heavy melting	43.00
No. 1 bundles	44.00
No. 2 bundles	43.00
Machine shop turnings .	34.00
Mixed borings, turnings	29.00-30.00
	38.00
Shoveling turnings	
Cast iron borings	29.00-30.00
No. 1 cupola	49,00
Charging box cast	47.00
Burnt cast	45,00-46,00
Stove plate	45.00-46.00
	48.00-49.00
Clean auto cast	
Linetripped motor blocks	40.00-41.00

Detroit (Brokers' buying prices; f.o.b. shipping point)

No. 1 cupola cast ... 46.00-47.00
Heavy breakable ... 42.00-43.00
Clean auto cast ... 48.00-49.00
Unstripped motor blocks 39.00* 48 00-49 00 Drop broken machinery Charging box cast 45.00

Los Angeles (Delivered) No. 2 bundles No. 1 cupola cast 42.00New York (Brokers' buying prices) 29 00 42.00-44.00

Cupola cast 45.00-46.00 Unstripped motor blocks 34.00-35.00 Philadelphia

Philadelphia (Delivered) No. 1 heavy melting ... No. 2 heavy melting ... No. 1 bundles ... No. 1 bundles ... No. 1 busheling ... Mixed berings, turnings Machine shop turnings. Short shoveling turnings No. 1 cupola cast ... Upstripped motor blocks Heavy breakable ... †Ceiling price. ‡Nominal. §Shipping point. 42.50† 42.50† 42.50† 42.50† 42.50† 34.50‡ 32.508 34.50¢ 49.00 38.0¢

Pittsburgh

45.00 52.00

Pittsburgh
(Delivered)
No. 2 heavy melting
No. 1 bundles
No. 2 bundles
Machine shop turnings
Shovel turnings
No. 1 cupola cast
Heavy breakable 44.00# 45.00# 44.00# 35.00# 39.0(#

†Ceiling price.

San Francisco

San Francisco
(Delivered)
No. 2 bundles
No. 1 cupola cast
Seattle
(F.o.b. shipping point)
No. 2 bundles
No. 1 cupola cast
Heavy breakable 40.0 St. Louis (Delivered)

No. 1 cupola Stove plate Unstripped motor blocks Youngstown

(Delivered)
No. 2 heavy melting, 38.00-39.04
No. 2 bundles 38.00-39.04
Machine shop turnings. 34.04

HAMILTON, ONT. (Delivered Prices)

Heavy Melt.

No. 1 Bundles

No. 2 Bundles

Mechanical Bundles

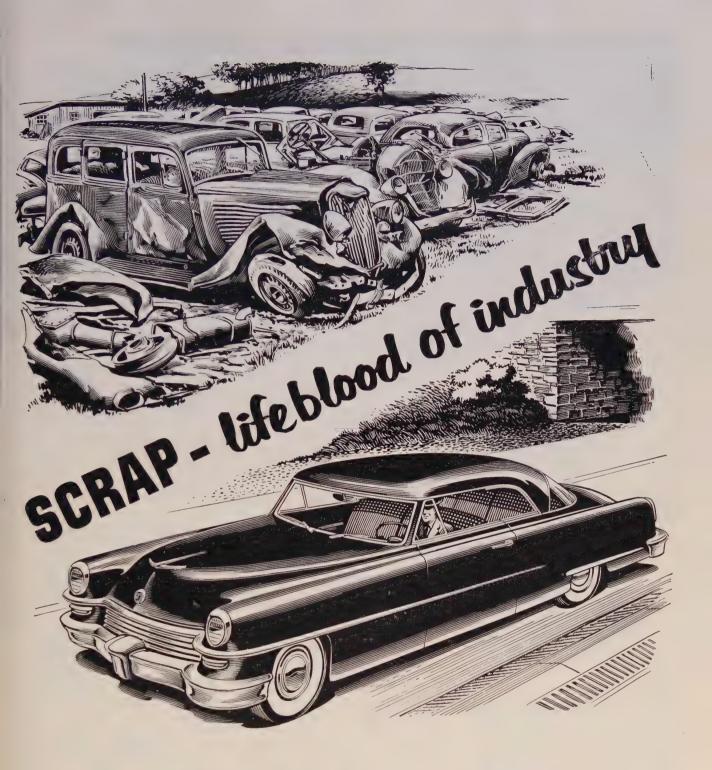
Mixed Steel Scrap

Mixed Borings, Turnings

Rails, Remelting

Rails, Rerolling Bushenings new lactory.
Prep'd
Unprep'd
Short Steel Turnings
Cast Iron Grades†
No. 1 Machinery Cast.

† F.o.b., shipping point.



CONSULT OUR NEAREST OFFICE FOR THE PURCHASE AND SALE OF SCRAP

URIA BROTHERS AND COMPANY, INC.

LINCOLN-LIBERTY BLDG.

Philadelphia 7, Penna.

PLANTS

LEBANON, PENNA. DETROIT (ECORSE),
READING, PENNA. M 1 C H 1 G A N

MODENA, PENNA. PITTSBURGH, PENNA.



OFFICES

BIRMINGHAM, ALA. DETROIT, MICH. PITTSBURGH, PENNA.
BOSTON, MASS. HOUSTON, TEXAS PUEBLO, COLORADO
BUFFALO, N. Y. LEBANON, PENNA. READING, PENNA.
CHICAGO, ILLINOIS LOS ANGELES, CAL. ST. LOUIS, MO.

CLEVELAND, OHIO NEW YORK, N. Y. SAN FRANCISCO, CAL.
SEATTLE, WASH.

LEADERS IN IRON AND STEEL SCRAP SINCE 1889

August 11, 1952



SECO PAYOFF REEL

SECO DESIGNS AND BUILDS STEEL MILL EQUIPMENT

Leveling and Shearing Lines Combination Edging and Flattening Lines **Tension Reels for Strip Polishers Narrow Strip Grinding Machines** Multiple Strand Pull-Out Rolls and Take-Up Frames Strip Coilers of the Up and Down Coiling Types Traverse Reels for Narrow Strip

Scrap Ballers

OR SHORT-RUN INTERMITTENT SERVICE!

• This new Seco Slitting Line is fast, accurate and dependable. It quickly pays for itself with minimum use. Relatively low cost has been achieved through economy of design, without sacrificing rugged durability. This Seco Slitting Line is built to the same high-precision standards of heavy-duty mill type equipment.

The slitter is pull through type . . . available in sizes from 12" to 36" wide. The 30" line illustrated above easily handles 6 to 8 cuts of .062 stock at 150 to 375 f.p.m. line speeds. Electrical equipment is A.C. driven, constant speed. Payoff and Tension Reels handle up to 10,000 pound coils.

Investigate the advantages of operating your own slitting line.

WRITE TODAY FOR COMPLETE SPECIFICATIONS AND OPERATING DATA

SECO

STEEL EQUIPMENT COMPANY

P. O. BOX 737, WARRENSVILLE STATION **CLEVELAND 22, OHIO**

The Metal Market



Welcome Sight for Copper Users

The Chilean-U.S. agreement on a new price for foreign copper and the relaxation of controls in this country are stimulating shipments of copper from San Antonio, Chile. The copper on the dock above comes from the Braden Copper mine n the Andes. Chile supplies about 35 per cent of U.S. copper requirements

Oversupply of major nonferrous metals may develop as aftermath of steel strike which caused a general unbalancing of raw material supplies. Aluminum price up

WASHINGTON is worried about unbalanced supply and demand for materials. New production-price alignments shaping up are causing earnest examination of use restrictions.

The steel situation is the keystone of the whole problem. Not before yearend will prestrike availability of steel be regained. In the meantime, supply of other metals is easing and the government is fearful of oversupply in such metals as aluminum, copper, tin, zinc and lead.

Zinc sellers slashed prices 1.50 cents a pound on all grades in a surprise move, effective Aug. 6. The cut coming in the face of stronger demand from galvanizers, was attributed to top-heavy stocks of refined metal. Quotations are now on the basis of 13.50c, E. St. Louis, for prime western.

The Catchup—In aluminum, for example, even though new plants scheduled for operation this fall will be held back nearly two months by steel scarcities, supply is gaining rapidly on demand. This trend could be accelerated by the new aluminum prices now in effect as marginal users

switch to more economical metals. Zinc producers think they'll regain some of their lost diecasting business through a combination of the aluminum markup and an attractive price tag on high grade zinc.

Seemingly the best way to get adequate price relief these days is to petition OPS for double the amount you need, because that agency has a penchant for halving any request presented. That, in short, is what happened in aluminum.

Primary aluminum prices are on the basis of 19.00c a pound for pig and 20.00c for ingot. A 5 per cent increase is allowed on mill products. No change is contemplated by OPS in ceilings on aluminum scrap or secondary ingots, although the market is tightening.

Secondary Follows—The boost in virgin aluminum prices plus increased orders from steel mills for deoxidizing grades pushed remelt ingot prices back to ceilings. Piston alloys and No. 12 foundry alloy had been one cent below ceiling since mid-July.

A lack of ingot-making scrap is now evident. Two major causes are

hope that OPS will raise ceilings on secondary ingot and scrap, and the rush of secondary smelters to buy.

Freer Tin Use in Sight

Watch for further relaxation on tin use now that the 16-month old ban on private buying and selling has been lifted. It's no secret that there's more tin available than is being consumed, and the stockpile is in good shape. As traders get stocks in the country and book promptly delivery orders, price will drift downward slowly but steadily. Most estimates of the yearend price lie in the \$1.12-\$1.16 range.

Forward buying in the brief time sales have been allowed shows price shading up to 3 cents but little business is being transacted. Most interest has been shown by small users. Tin plate people and other big consumers are still on the sidelines.

RFC will continue buying tin under existing contracts and will buy concentrates for the still-strikebound Texas smelter. Offerings to consumers at \$1.215 will serve as a lid to any price rise. The British might try to replace 10,000 tons sold to the United States soon. On the deal with the U. S. for 20,000 tons of tin, the British say they netted \$53 million.

Campaign in Copper

Copper and brass companies, which had sizable chunks of their normal market wooed away by substitutions, now are planning a campaign to regain them. The battle will be tough, too, with prices high and going higher when a domestic mine settlement is reached.

NPA must see things that way too. Recent actions indicate it is seeking any independent use for copper and aluminum it can find. One move was in removing end-use restrictions on both metals. Another move, to boost building applications, allows free use of either metal in construction and doubles self-authorization quotas.

Aluminum Output Steady

Reynolds Metals Co.'s San Patricio, Tex., plant, put in operation in May, turned out enough aluminum in June to offset the 250 tons daily lost at Alcoa's storm-damaged Massena, N. Y., plant and kept June primary output of 77,476 tons within 4 per cent of May. Six-month total of 461,536 tons was nearly 15 per cent higher than for the like period last year and topped output in the year 1946.

NONFERROUS METALS

(Cents per pound, carlots, except as otherwise noted)

Primary Metals

Copper: Electrolytic 24.50c, Conn. Valley; Lake 24.62 1/2 c, delivered.

 Brass
 Ingots:
 85-5-5-5
 (No. 115)
 27.25c,

 88-10-2
 (No. 215)
 40.00c;
 80-10-10
 (No. 305)

 33.00c;
 No. 1
 yellow (No. 405)
 23.25c,

Zinc: Prime western 13.50c; brass special 13.75c; intermediate 14.00c, East St. Louis; high grade 14.85c, delivered.

Lead: Common 15.80c; chemical 15.90c; corroding 15.90c, St. Louis.

Primary Aluminum: 99% plus, ingots 20.00c, pigs 19.00c. Base prices for 10,000 lb and over. Freight allowed on 500 lb or more but not in excess of rate applicable on 30,000 lb c.l. orders.

Secondary Aluminum: Piston alloys 20.50c; No. 12 foundry alloy (No. 2 grade) 19.50c; steel deoxidizing grades, notch bars, granulated or shot: Grade 1, 18.80c; grade 2, 18.60c; grade 3, 18.40c; grade 4, 18.20c.

Magnesium: Commercially pure (99.8%) standard ingots, 10,000 lb and over 24.50c, f.o.b. ard ingots, 10 Freeport, Tex.

Tin: Grade A, prompt 121.50c.

Antimony: American 99-99.8% and over but not meeting specifications below 39.00c; 99.8% and over (arsenic 0.05% max., other impurities 0.1% max.) 39.50c; f.o.b. Laredo, Tex., for bulk shipments.

Nickel: Electrolytic cathodes, 99.9%, base sizes at refinery, unpacked, 56.50c; 25-lb pigs, 59.15c; "XX" nickel shot, 60.15c; "F" nickel shot or ingots, for addition to east iron, 56.50c. Prices include import duty.

Mercury: Open market, spot, New York, \$188-\$191 per 76-lb flask.

Beryllium-Copper: 3.75-4.25% Be, \$1.56 per lb of alloy, f.o.b. Reading, Pa.

Cadmium: "Regular" straight or flat forms, \$2.00 del; special or patented shapes \$2.15.

Cobalt: 97.99%, \$2.40 per lb for 500 lb (kegs); \$2.42 per lb for 100 lb (case); \$2.47 per lb under 100 lb.

Gold: U. S. Treasury, \$35 per ounce.

Silver: Open market, New York 83.25c per oz. Platinum: \$90-\$93 per ounce from refineries.

Palladium: \$24-\$25 per troy ounce. Iridium: \$200 per troy ounce.

Titanium (sponge form): \$5 per pound.

Rolled, Drawn, Extruded Products COPPER AND BRASS

(Ceiling prices, cents per pound, f.o.b. mill, effective July 1, 1952)

effective July 1, 1952)

Sheet: Copper 45.52; yellow brass 40.17; commercial bronze, 95% 45.15; 90% 44.38; red brass, 85% 43.10; 80% 42.34; best quality, 41.35; nickel silver, 18%, 55.08; phosphorbronze grade A, 5%, 64.71.

Rod: Copper, hot-rolled 41.37; cold-drawn 42.62; yellow brass free cutting, 33.85; commercial bronze 95%, 44.84; 90% 44.07; red brass 85%, 42.79; 80%, 42.03.

Seamless Tubing: Copper 45.56; yellow brass 43.18; commercial bronze, 90%, 47.04; red brass, 85%, 46.01.

Wire: Yellow brass 40.46; commercial bronze.

Wire: Yellow brass 40.46; commercial bronze, 95%, 45.44; 90%, 44.67; red brass, 85%, 43.39; 80%, 42.63; best quality brass, 41.64. (Base prices, effective July 1, 1952)

Copper Wire: Bare, soft, f.o.b, eastern mills, 100,000 lb lots, 32.795; 30,000 lb lots, 32.92; l.c.l., 33.42, Weatherproof, 100,000 lb, 33.60; 30,000 lb , 33.85; l.c.l., 34.35. Magnet wire del., 15,000 lb or more, 38.75; l.c.l., 39.50.

(30,000 lb base; freight allowed on 500 lb or more, but not in excess of rate applicable on 30,000 lb c.l. orders. Prices in new schedule, effective as of Aug. 4, will be 5 per cent

Sheets and Circles: 2s and 3s mill finish c.l.
Coiled

Thickness	Widths or	Flat	Coiled	Sheet
Range	Diameters,	Sheet	Sheet	Circle
Inches	In., Inc.	Base*	Base	Base
0.249-0.136	12-48	30.1		
0.135-0.096	12-48	30.6		
0.095-0.077	12-48	31.2	29.1	33.2
0.076-0.061	12-48	31.8	29.3	33.4
0.060-0.048	12-48	32.1	29.5	33.7
0.047-0.038	12-48	32.5	29.8	34.0
0.037-0.030	12-48	32.9	30.2	34.6
0.029-0.024	12-48	33.4	30.5	35.0
0.023-0.019	12-36	34.0	31.1	35.7
0.018-0.017	12-36	34.7	31.7	36.6
0.016-0.015	12-36	35.5	32.4	37.6
0.014	12-24	36.5	33.3	38.9
0.013-0.012	12-24	37.4	34.0	39:7
0.011	12-24	38.4	35.0	41.2
0.010-0.0095	12-24	39.4	36.1	42.7
0.009-0.0085	12-24	40.6	37.2	44.4
0.008-0.0075	12-24	41.9	38.4	46.1
0.007	12-18	43.3	39.7	48.2
0.006	12-18	44.8	41.0	52.8

* Lengths 72 to 180 inches. † Maximum diameter, 26 inches.

Screw Machine Stock: 5000 lb and over.

Dia. (in.)	—Round—	Hexag	onal
or distance	R317-T4		
across flats	17S-T4	R-317-T4	17S-T4
0.125	52.0		
0.156-0.0188	44.0		
0.219 - 0.313	41.5		
0.375	40.0	46.0	48.0
0.406	40.0		
0.438	40.0	46.0	48.0
0.469	40.0		
0.500	40.0	46.0	48.0
0.531	40.0		
0.563	40.0		45.0
0.594	40.0		1111
0.625	40.0	43.5	45.0
0.688	40.0		45.0
0.750-1.000	39.0	41.0	42.5
1.063	39.0		41.0
1.125-1.500	37.5	39.5	41.0
1.563	37.0		1111
1.625	36.5		39.5
1.688-2.000	36.5		

LEAD

(Prices to jobbers f.o.b, Buffalo Cleveland, Pittsburgh) Sheets: Full rolls, 140 sq ft or more \$21.00 per cwt; add 50c cwt 10 sq ft to 140 sq ft. Pipe: Full coils \$21.00 per cwt. Traps and bends: List prices plus 50%.

ZINO
Sheets 23.00c, f.o.b. mill 36,000 lb and over. Ribbon zinc in coils, 21.25c, f.o.b. mill, 36,000 lb and over. Plates, not over 12-in., 22.50c; over 12-in., 22.50c;

MAGNESIUM
Extruded Rounds 12 in. long, 1.31 in. in diameter, less than 25 lb, 55.00-62.00c; 25 to 99 lb, 45.00-52.00c; 100 lb to 5000 lb, 41.00c.

TITANIUM
(Prices per lb 10,000 lb and over, f.o.b. mill) Sheets, \$15; sheared mill plate, \$12; strip, \$15; wire, \$10; forgings, \$6; hot-rolled and forged bars, \$6.

DAILY PRICE RECORD

					Alu-	An-		
1952	Copper	Lead	Zinc	Tin	minum	timony	Nickel	Silver
Aug. 6-7	24.50	15.80	13.50	121.50	20.00	39.00	56.50	83.25
Aug. 4-5	24.50	15.80	15.00	121.50	20.00	39.00	56.50	83.25
Aug. 1-3	24.50	15.80	15.00	121.50	19.00	39.00	56.50	83.25
July 24-31	24.50	15.80	15.00	121.50	19.00	39.00	56.50	83.25
July 1-23	24.50	15.80	15.00	121.50	19.00	39.00	56.50	82.75
July Avg.	24.50	15.80	15.00	121.50	19.00	39.00	56.50	82.885
June Avg.	24.50	15.06	15.74	121.50	19.00	39.00	56.50	82.75
May Avg.	24.50	15,519	19,50	121.50	19.00	42.077	56.50	85.356
Apr. Avg.	24.50	18.723	19.50	121,50	19.00	49.077	56.50	88.00
Mar. Avg.	24.50	18.80	19.50	121.50	19.00	50.00	56.50	88.00
Feb. Avg.	24.50	18.80	19.50	121.50	19.00	50.00	-56.50	88.00
Jan. Avg.	24.50	18.80	19.50	109.404	19.00	50.00	56.50	88.00

NOTE: Copper: Electrolytic, del. Conn. Valley; Lead, common grade, del. St. Louis; Zinc, prime western, E. St. Louis; Tin, Straits, del. New York; Aluminum primary ingots, 99%, del.; Antimony, bulk, f.o.b. Laredo, Tex.; Nickel, electrolytic cathodes, 99.9%, base sizes at refinery unpacked. Silver, open market, New York. Prices, cents per pound; except silver, cents per ounce.

Plating Materials

Chromic Acid: 99.9% flakes, f.o.b. Philade phia, carloads, 28.00c; 5 tons and over 28.50 1 to 5 tons, 29.00c; less than 1 ton 29.50c.

Copper Anodes: Base 2000 to 5000 lb; f.c. shipping point, freight allowed: Flat, rolle 38.34c; oval 37.84c.

Nickel Anodes: Rolled oval, carbonized, ea loads, 74.50c; 10,000 to 30,000 lb 75.50c; 30 to 10,000 lb 76.50c; 500 to 3000 lb 77.50 100 to 500 lb, 79.50c; under 100 lb, 82.50 f.o.b. Cleveland.

Nickel Chloride: 36.50c in 100 lb bags; 34.5 in lots of 400 lb through 10,000 lb; 34.0 over 10,000 lb, f.o.b. Cleveland, freight a lowed on 400 lb or more.

Sodium Stannate: 25 lb cans only, less the 100 lb to consumers 86.7c; 190 or 350 drums only, 100 to 600 lb 71.60c; 700 to 19 lb, 69c; 2000 to 9900 lb, 67.3c. Freight a lowed east of Mississippi and north of Oh and Potomac rivers.

Tin Anodes: Bar, 1000 lb and over, \$1.375; 5to 999 lb, \$1.38; 200 to 499 lb, \$1.385; let than 200 lb, \$1.40. Freight allowed east Mississippi and north of Ohio and Potomac.

Zine Cyanide: 100 lb drums, less than drums 54.30c, 10 or more drums, 52.30c, f.o. Niagara Falls, N. Y.

Stannous Sulphate: 100 lb kegs or 400 lb bb less than 2000 lb \$1.11; more than 2000 l \$1.09. Freight allowed east of Mississippi amorth of Ohio and Potomac rivers.

Stannous Chloride (Anhydrous): In 400 lb bt 98.5c; 100 lb kegs 99.5c, Freight allowed.

Scrap Metals

Brass Mill Allowances

Clean Rod Cleam

Ceiling prices in cents per pound for less that 20,000 lb, f.o.b. shipping point, effective Ju. 26, 1951.

	Heavy	Ends	Turnin.
CopperYellow Brass			20.757
Commercial Bronze			
95% 90%	$20.50 \\ 20.50$	20.25 20.25	19.757 19.757
Red Brass			
85% 80%	$20.25 \\ 20.125$	20.00 19.875	
Muntz metal	18.125	17.875	17.37
Nickel silver, 10%	21.50	21.25	10.757
Phos. Bronze, 5%	25.25	25.00	24.00

Copper Scrap Ceiling Prices

(Base prices, cents per pound, less than 40,000 lb f.o.b, point of shipment)

40,000 lb f.o.b, point of shipment)

Group 1: No. 1 copper 19.25; No. 2 copposite and mixed heavy 17.75; light copposite 16.50; No. 1 borings 19.25; No. 2 boring 17.75; refinery brass, 17.00 per lb of dry ocontent for 50 to 60 per cent material at 17.25 per lb for over 60 per cent material Group II: No. 1 soft red brass solids 18.5. No. 1 composition borings 19.25 per lb of content plus 63 cents per lb of tin contermixed brass borings 19.25 per pound of content plus 63 cents per lb of tin contermixed brass borings 19.25 per pound of content plus 60 cents per lb of tin contermixed brass borings 19.25 per bloof tin content plus 60 cents per lb of tin contermixed brass screens 18.25; lined red cobxes 17.25; cocks and faucets 16.00; mix brass screens 16.00; zincy bronze solids a borings 16.25.

Aluminum Scrap Ceiling Prices

(Cents per pound, f.o.b. point of shipment, less than 5000 lb)

less than 5000 lb)

Segregated plant scrap: 2s solids, copper fre
10.50; high grade borings and turnings, 8.5
No. 12 piston borings and turnings, 7.5
Mixed plant scrap: Copper-free solids, 10.0
dural type, 9.00. Obsolete scrap: Pure cable, 10.00; sheet and sheet utensils, 7.25; castings and forgings, 7.75; clean pistons, frof struts, 7.75; pistons with struts, 5.75.

DEALERS' BUYING PRICES

(Cents per pound, New York, in ton lots) Lead: Heavy 12.00-12.25; battery plates 7.0 7.50; linotype and stereotype 13.50-14.00; eletrotype 12.00-12.50; mixed babbitt 14.50-14.7 Zinc: Old zinc, 6.00-6.50; new die cast scra 6.00-6.50; old die cast scrap, 5.00-5.50.

Steel Bars . . .

Bar Prices, Page 137

Cleveland-Heavy bar carryover tonnage from third quarter along with set-asides for military requirements and allotments for the warehouses and further converters, precludes any open rolling time on bar mills in fourth quarter. Acute shortage of bars over the next several months is expected to hold down demand for other products, such as sheets, used in conjunction with bars in product assemblies. Cold-drawn bar producers are pinched for hot bar supplies and indications are cold-finished bar tonnages will be difficult to obtain well into first quarter next year. The shortage of bars is accentuated by the high proportion of production required on military account. New price schedules have not yet been announced but expectations are hotrolled bars and special bar sections will be advanced \$5 per ton, cold-finished bars \$7.50, alloy and stainless steel hot-rolled bars \$7.50, and alloy cold drawn \$12.

Boston—After armament tonnage and established allotments to converters and warehouses are filled, bar tonnage to other consumers through balance of this year will be limited. Delivery of bars to cold finishers will be subject to delays.

Philadelphia - Proposed fourth quarter set-asides on bars for top defense requirements mean a still tighter supply squeeze on manufacturers of consumer durable goods.

Pittsburgh-Prospects for obtaining hot-rolled bars are dimming further as mills announce they are taking no new orders, except for the military. Cold-finished bar users are finding supply tighter than ever.

Sheets, Strip . . .

Sheet and Strip Prices, Page 137 & 138

Cleveland-Burden of military requirements, plus warehouse and converter allotments will just about take all of fourth quarter production of the sheet mills. Civilian goods manufacturers can't expect to place much new business with the mills for delivery before the first quarter of next year. Carryover tonnage from third quarter is about all they will receive through the balance of this year. Pressure on the mills for shipments on military account is mounting as efforts are being made to make up the June-July tonnage loss by yearend. This means the military load on the mills through the next several months will be just about double that prior to the strike. Higher prices, approved by the Office of Price Stabilization, had not been announced up to last midweek. Indi-cations are hot-rolled sheets will rise \$3.50 per ton, cold-rolled sheets \$4.50, enameling sheets \$5.50, galvanized sheets \$5.50, electrical sheets from \$3.50 to \$12 depending on grade, and hot-rolled strip \$4.50.

Boston—Balance in narrow cold-rolled strip supply depends heavily on how soon converter allotments are filled. Most rerollers are better off on high carbon and alloy hot-rolled

than on low carbon.

New York—Sheet mills have not









SIMPLY PEELS FOR ADJUSTMENT

Made up of from 3 to 63 layers of .002 or .003 inch brass or steel, metallically bonded together over their entire surfaces. No dirt between layers. Peels with penknife.





FOR QUICK, ASSEMBLY LINE USE

The laminations of the Lamsou® Shim (in brass only) are temporarily joined by spotsoldering on the edges. Gauges and number of laminations within one shim are unlimited.





FOR SUPER SPEED, THIN GAUGE SITUATIONS

The little tab holds shim laminations together firmly, yet is easily removed. Different metals can be used in the same shim.

THE LOOSE LEAF SHIM



FOR UNLIMITED FLEXIBILITY

This is the simplest of all custom-stamped shims. It is completely flexible. Usually sets including several different gauges are made up.

PACKAGED SHIM STOCK



READY FOR EASY USE, WITHOUT WASTE

Thin gauge 6" x 100" rolls feed through package slots. Heavier gauges in flat envelopes. Available from your Industrial Distributor.

* T.M. Applied For

SEND FOR LITERATURE



3408 UNION STREET

GLENBROOK, CONN.

yet acted on acceptance of new civilian tonnage for shipment over remainder of this year. They are being called upon to set aside certain quantities for military requirements -22 per cent in the case of hot-rolled carbon and 13 per cent in the case of cold-rolled, plus top rated tonnage being carried over from the second and third quarters.

Pittsburgh—Little promise is of-fered civilian goods producers who are hoping to get new sheet orders on mill books. No new orders will be taken except from the military until a more complete analysis of available fourth quarter tonnage can be made. Fourth quarter bookings will

extend into January and February.

St. Louis—Sheet delivery schedules are uncertain as mills await word from Washington on military set-asides. It appears these will run from 10 to 25 per cent of total tonnage locally.

Reinforcing Bars . . .

Reinforcing Bar Prices, Page 137

Seattle—Bethlehem Pacific Coast Steel Corp. again is operating at capacity. Backlogs are heavy. Northwest Steel Rolling Mills did not resume immediately after the strike due to a dispute over fringe benefits.

Tubular Goods . . .

Tubular Goods Prices, Page 141

Los Angeles — Market observers estimate that 1952 will see 8 to 10 per cent fewer oil wells drilled than planned due to strike-caused shortages of oil well casing and tubing.

Seattle—Cast iron pipe market is slow. No sizable tonnages are up for bidding and no awards of more than 100 tons were reported recently. Government projects call for fair ton-

Structural Shapes . . .

Structural Shape Prices, Page 137

Boston-Structural tonnage reaching fabricating shops includes some volume originally scheduled for May. Bulk of rollings through balance of this quarter will be against second and third quarter bookings. Carryover into fourth will leave limited capacity for new tonnage for final three months. Fabricating shops are hampered by lack of balance, but more are paying premiums for fill-in

requirements.

New York—With little emergency industrial expansion under way here, building over remainder of the year is likely to be spotty. Prior to the strike Washington had approved various commercial projects here to relieve lagging conditions in the building field. However, much of this work, it is thought, will be held up pending easier steel supply.

Philadelphia—Barring some public projects, bridges in particular, structural activity lags. The Delaware tural actvity lags. River Port Authority plans to go ahead with a 6-lane bridge between Philadelphia and Camden, requiring 35,000 tons of structural steel. The project will not likely be up for fig-

ures before spring.

Pittsburgh—Building programs will

be pinched by the shortage of structurals. No new orders are being taken at present.

Seattle-Fabricators report a drop in demand, attributed chiefly to lack of steel. Shortages will be felt by fabricating plants for many weeks.

Plates . . .

Plate Prices, Page 137

Boston-Plate mills are opening books for fourth quarter after rescheduling during 15 days deferment permitted following termination of work stoppages. Open tonnages available for the period are uncertain, notably in wider and heavier plates. Some mills have not yet untangled the rescheduling problem. Most mills that were closed by the strike will have little or no new tonnage available, except against higher ratings. Heavy plate orders against Z-2 ratings have been entered, including weldment shop requirements, also high tensile low alloy grades.

New York—Most plate producers haven't opened books for fourth quarter. They will have little capacity open for new tonnage when they do, other than for military requirements. ments. These latter are protected by recently announced setasides—
25 per cent of carbon production
and 60 per cent alloy, in the case
of sheared and universal plate; 20
per cent carbon and 40 per cent alloy in the case of strip plate.

Philadelphia—Platemakers will

open books this week for fourth quarter but indications are they will be able to accept little new tonnage Lukens Steel is back in production. but its 112-in, mill will be down two weeks for major repairs, and its 120in. mill four to five weeks. The company's 140-in. and 206-in, mills will start operations as soon as steel is

available.

Pittsburgh - Plate shipments are being made against old orders until actual directives diverting produc tion to the military are received These are expected to cut heavily in to supplies for civilian goods ove the balance of the year.

Wire . . .

Wire Prices, Page 139

Cleveland-Wire mills are again in production but it will take producer some time to catch up on back or ders. Carryover from third to fourth quarter will be heavy and with mili tary and related needs getting firs call on output into fourth quarte civilian goods makers will be on shor rations for a time. New price schedules had not been announced up to last midweek. However, suggested in creases by the General Steel Prod ucts Industry Advisory Committee to OPS are expected to be applied with drawn wire up \$7.50 per ton nails \$9, staples \$8, woven fence \$22, wire netting \$14, fence posts \$8 bale ties \$9, barbed and twisted win \$8, reinforcing mesh \$14, chain lin fabric \$10, wire rope \$31, steel scree cloth 4.7 per cent of the base prid and extras.

Pittsburgh — Two months' delin ment tonnage on books doesn't speany relief from the present toug vire supply situation. For the present customers are holding off any figns of anxiety about supply, but hey are sure to come. Production luring August is expected to be at the most only 75 per cent of capacity.

Boston—indications are wire mills will emerge from backlog jams ahead of those producing other finished steel

Nov. 15.

New York—Mills are opening books for fourth quarter with varying space open, depending on end-use product.

Tin Plate . . .

Tin Plate Prices, Page 138

Cleveland-Resumption of tin plate production has removed threat of a shortage of plate for the food pack. Emergency government distribution regulations assure packers cans will be in sufficient supply to care for requirements. Meanwhile, the tin plate producers have not yet announced the new prices authorized by the Office of Price Stabilization. Just how the increases will be applied is not certain since, it will be recalled, 1952 contract prices were not announced last December. Suggested increases recommended by the General Steel Products Industry Advisory Committee to OPS are 25 cents per base box, on hot dip and electrolytic tin plate, and black plate.

Semifinished Steel . . .

Semifinished Prices, Page 137

Youngstown—District steel operations reached 90 per cent of capacity last week. Some plants encountered difficulty starting up after the steel strike. Three bessemer converters, 68 open hearths and 21 blast furnaces are in operation. Ingot operations the first week after the strike averaged about 45 per cent. Blast furnaces had trouble resuming promptly resulting in delays starting up some open hearths and rolling mills.

Iron Ore . . .

Iron Ore Prices, Page 143

Cleveland—Lake shippers face a virtually insurmountable task of recouping loss of more than 22.2 million tons of iron ore in the midyear strike. The deficit from the 1951 movement will be reduced by yearend, but cannot be eliminated due to shortness of the lake shipping season.

Through Aug. 4, cumulative shipments amounted to 24,849,383 tons compared with 47,039,499 tons for the like period a year ago. At the beginning of the strike, the season's cumulative total showed an increase of 167,580 tons over the like 1951 period.

Shipments for the week ended Aug. 4 jumped to 2,800,763 tons from only 117,860 tons the preceding week and will show further gains for the Aug. 11 period. Shipments for the like week a year ago totaled 3,061,587 tons.

The movement for July amounted to 1,903,672 tons compared with 13,574,271 tons for July, 1951.

Substantial tonnage of ore will be shipped all-rail from the head of the lakes through next spring. Whether such shipments will be sufficient to prevent an ore shortage is uncertain.

Ferroalloys . . .

Ferroalloy Prices, Page 143

Washington—The OPS issued CPR 163, effective Aug. 8, a tailored price regulation under which ceiling prices on manganese in its various forms are to be calculated. Heretofore, prices were figured under GCPR. The new order permits substantial increases which are a combination of Capehart adjustments plus allowances under the industry earnings standard.

The order permits price rises on ferromanganese, silicomanganese, spiegeleisen and manganese metal which average about \$40 a ton. The effect on steel costs is to increase production costs by about 32 cents a net ton on ingots, and about 46 cents a net ton on finished steel products.

The new ceiling prices on standard ferromanganese in lump form range from \$225 to \$228 a gross ton f.o.b. shipping point. Prices on spiegeleisen range from \$84 to \$95 in carload bulk lots. Prices on silicomanganese range from 10.90c to 14.05c for lump and 11.10c to 14.25c for crushed.

New York—Electro Metallurgical Co. reduced prices on all grades of 90 per cent ferrosilicon and silicon metal, effective Aug. 1, as a result of savings made possible by improved operating techniques. Reductions range from ½-cent a pound of silicon for regular 90 per cent ferrosilicon and 1/5-cent for low aluminum

90 per cent ferros.Lc.n to $2\frac{1}{2}$ cents for low-calcium grace silicon metal. The latter amounts to a reduction of 11.6 per cent and the weighted average of all reductions is about 7 per cent.

Contract prices in cents per pound of contained silicon for carload lots of lump material in bulk are:

	Price	
Material	Old	New
Ferrosilicon:		
90%	17.5c	17.0c
90%, Low Aluminum	18.2	18.0
Silicon Metal:		
Max. 1% Fe Grade	20.0	18.5
Max. 2% Fe Grade	19.6	18.0
Low-Calcium Grade	21.5	19.0
Low-Aluminum Grade	22.0	20.0

New York—Producers of standard ferromanganese are increasing base-prices \$40 a ton, effective Aug. 8, under OPS approval. This increase is based solely on the increa e over past months in imported manganese ore.

Prices on low carbon ferromanganese, medium carbon ferromanganese and manganese metal are also being advanced, as of the same date 2.2 cents. Electrolytic manganese is also undergoing a corresponding advance, it is reported. Silicomanganese is up 1½ cents, also ferromangane e briquets and silicomanganese briquets.

Electro Metallurgical Co. is e tablishing Marietta, O., as a ba e. It now bases prices at Alloy, W. Va., Niagara Falls, N. Y., Ashtabula, O., and Marietta, O.

E. J. Lavino & Co., is naming



• ROLLER LEVELLING

· EDGE ROLLING · SLITTING

· COIL SHEARING

 SHEET PICKLING—any width, any length, any thickness

Write for Detailed information folder



OFFICE: FRICK BUILDING, PITTSBURGH 22, PA. PLANT: McKEES ROCKS, PA.



ALL THESE OPERATIONS ON ONE MACHINE

formance and data on all models.

STRAIGHT CUTTING -



With straight cutting attachment, Pullmax performs as a straight shear. Cuts inside square holes. Can be used as a guide for other operations.

- CIRCLE CUTTING

The Pullmax machine does not require a center hole for circle cutting. Simple, adjustable centering attachments cut circles quickly and accurately.





- SLOT CUTTING



Slot cutting tools permit almost any slotting operation. Top tool in various sizes, lower tool adjustable.

BEADING .

Special beading tools permit straight, circular and irreg-ular beads. Tools for special beads can be made in any tool room.





FOLDING



Standard size folding tools do straight, circular or irregular shape folds. Special tools easily made in any tool room.

LOUVERS and NIBBLING



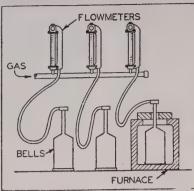
Special attachments permit louver cutting and nibbling.



PULLMAX . . . "The complete sheet and plate working shop" . . . in one machine!

2441 North Sheffield Ave.

Chicago 14, Illinois



e above diagram shows the principle of operation of AGF FLOW METERS.

AGF FLOW METERS

For Ni-Carbing* and Gas Carburizing in rotary and vertical retort carburizers, these meters permit maintenance and duplication of atmosphere gas

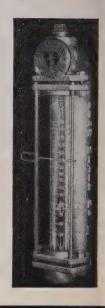
* The Original Ammonia-Gas Case Hardenina Process.

Made by the PIONEERS in gas furnace equipment.



Write for Bulletin No. 700

MEASURE YOUR GAS FLOW TO RETORT OR MUFFLE



996 LAFAYETTE STREET, ELIZABETH 4, N. J.

THEORY AND PRACTICE OF ROLLING STEEL . Wilhelm Tafel

312 Pages Covers every angle of the design, Price Postpaid construction and operation of the \$4.50 steel rolling mill.

THE PENTON PUBLISHING CO.

Book Department, 1213 W. 3rd St., Cleveland 13, O.



2086 W. 110th ST. CLEVELAND 2, OHIC

Lynchburg, Va., as a base, in addition to Sheridan, Pa.

Pig Iron . . .

Pig Iron Prices, Page 136

Detroit—Resumption of work at some of the automakers' captive oundries puts additional pressure on ron suppliers. Foundry activity is at a low level, due mainly to steel shortages. Consumers are digging into their castings inventories.

Michigan Iron & Coke Co., Detroit, formed last week, plans to build a merchant iron plant just south of St. Clair, Mich. with one blast furnace and about 55 coke ovens. It will have iron capacity of 300,000 tons and coke rapacity of 350,000 tons a year.

Chicago—Steel plants which produce merchant iron have not yet resumed shipments. Apparently this awaits return of normal blast furnace and open hearth operations.

New York—Pig iron production at furnaces feeding this territory is getting back to normal. Producers are being pressed so hard for basic iron they have not yet had much to offer in the way of foundry grades.

Metallurgical Coke ...

Metallurgical Coke Prices, Page 141

Pittsburgh—John L. Lewis' 60-day termination notice has had no noticeable effect on the relatively weak coal market and isn't expected to cause any immediate rush for coal. Mills have stockpiled a comfortable 70 or 80-day supply and expect to keep it.

Philadelphia—Threat of a possible stoppage of coal mining this fall is stimulating demand for furnace and

foundry coke.

Chicago—Activity in foundry coke is picking up. In the first ten days of August shipment releases exceed total July deliveries by a big margin.

Scrap . . .

Scrap Prices, Page 144

Philadelphia — Scrap demand is picking up with prices drifting back to ceiling on most grades. There is no wild rush for tonnage as consumers are actually in better position than at any time this year. Steel mills, however, are concerned over the possibility of a scarcity this winter. All leading grades of steel mill and foundry scrap are at ceiling with No. 1 cupola currently around \$49, delivered, and unstripped motor blocks, \$38, delivered.

Pittsburgh—With a 75-day supply of scrap on hand, and another 30 days on order but not shipped, steel mills aren't clamoring for scrap. General feeling is the current ceiling prices on scrap will fall slightly if the threat of an ore shortage is

passed.

Chicago—Activity in scrap has returned to near normal. Freight car congestion around steel plants has been pretty well untangled so that incoming scrap can move in promptly. All steelmaking grades are at full ceiling price. Cast grades are firming and predictions are these will move to ceiling soon.

Detroit—Steel mills' scrap inventories are dropping as the result of full operation with only meager supply of scrap obtainable from industrial sources. All orders are at ceiling on blast furnace, open-hearth and electric furnace grades. Cast items are still available at somewhat below ceiling but are expected to move to ceiling. A new outlet for blast furnace scrap, Michigan Iron & Coke Co., which will build a plant near St. Clair, Mich., is exciting comment in the trade.

Boston—Steel scrap prices have rebounded to ceiling levels and even cast grades reflect a firmer trend. Machine shop turnings are included in the stronger price structure, upturn registering an advance up to \$8 ton on some steel grades. This strength is noteworthy in view of the lack of heavy buying. Cast grades are \$3 to \$5 higher in some cases.

Buffalo—Stronger price tendencies rule the scrap market. Three leading mill consumers lifted the embargo on shipments from dealers last week. However, no move was made to bring steelmaking grades back to government ceiling levels as the mills withheld new bids pending clearance of old orders.

St. Louis—Under pressure of poststrike demand scrap prices are back at ceiling levels with exception of unstripped motor blocks, still available around \$5 under ceiling.

Los Angeles—Mill buying of steel-making scrap increased heavily upon resumption of steelmaking. Generally prices are \$5 under ceiling. No. 2 bundles are \$29, and No. 1 cupola cast, firmed by heavier foundry buy-

ing, is \$42 to \$44.

San Francisco—No 1 cupola cast scrap has spurted \$4 a ton. It now is quoted by dealers at \$46 a ton, delivered. Consumers are out buying scrap again in volume. Steel scrap prices are holding the pre-strike range: No. 2 bundles and turnings \$5 under ceiling: others at ceiling levels.

Seattle—Scrap is arriving in good volume. Mills report no shortages. Plants are paying ceiling prices for steel scrap but cast iron grades are moving at \$5 under the government maximums.

Warehouse . . .

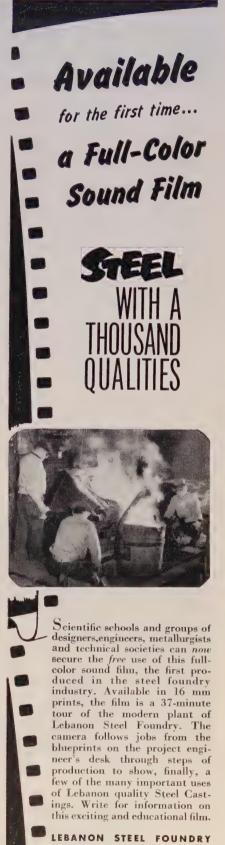
Warehouse Prices, Page 143

Philadelphia — Warehouses expect increased mill quotas to materialize in September. Meanwhile, receipts from the mills are seen increasing sufficiently to enable the distributors to do a larger volume of business in August than in July.

New York—Limited deliveries of steel are reaching warehouses as shipments to consumers are resumed.

Pittsburgh—Prospects for getting warehouse steel are brighter. Most types are beginning to dribble in, and are expected to pick up as full mill production is reached.

Cleveland—While the warehouses are to get shipments from the mills on the basis of 120 per cent of their base period receipts, expectations are distributors' stocks will be slow rebuilding to pre-strike levels. By the time the work stoppage ended warehouse inventories, if not depleted,



LEBANON STEEL FOUNDRY
Dept. B, Lebanon, Pa.
In the Lebanon Valley



TOUGH PRODUCTION PROBLEMS

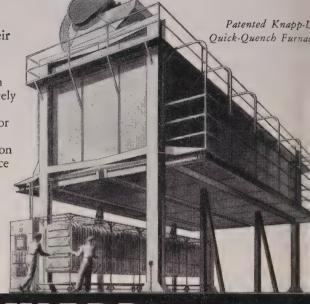
MADE EASIER WITH KNAPP'S 30 YEARS KNOW-HOW!

Manufacturers who have tough production schedules equip their plants with Knapp heat-treating equipment.

They are using them because they are built for SPEED:— Temperature recovery well within established limits. Quench adjustable from 3 to 8 seconds with arrested descent immediately before immersion, thus reducing impact and preventing excessive distortion; EASE OF HANDLING:—assured by floor level loading and unloading; SAFETY:—positive locking devices at floor level and top positions, all operations push button controlled by one operator; ACCURACY:—guaranteed variance of temperature not to exceed plus or minus 5°F in any part of the working zone after stabilization; QUALITY:— uniformly high physical and chemical properties due to the elimination of the human element.

Over 40 Airframe and other Manufacturers in the U.S. and abroad are meeting their production schedules with patented Knapp-Lee Quick-Quench furnaces.

The Knapp reputation for building better equipment is maintained throughout its entire line of standard and custom built furnaces. Knapp has the answer to your heat treating problems. Write today.



JAMES H. KNAPP COMPANY

839-841 EAST FOURTH STREET . LOS ANGELES 13, CALIFORNIA



Careful balancing makes Penn Buckets self-dumping when loaded and self-righting when empty. Welded construction prevents "clinging", makes them empty easily and completely. The swivel wheels increase handling efficiency, too.



WRITE TODAY FOR NEW BULLETIN DIMENSION SHEET AND PRICE LIST

PENN IRON WORKS, INC.

DESIGNED and BUILT
TO DO THE JOB

THE WEBB PLATE BENDING ROLL



Built in Two Types, Initial Pinch and Pyramid. Complete Range of Sizes and Models.

Prompt Delivery on Standard Sizes

Webb Plate Bending Rolls are designed and built for the forming of cylindrical shapes from rolled steel plate with greater speed and accuracy for high quality production.

All Webb Rolls are backed by continuous progress in the development of industrial machinery since 1881.

Write for catalog

MANUFACTURERS OF PLATE ROLLS, COMBINATION PUNCH & SHEARS 5
Industrial Weighing Equipment

Since 1881

THE WEBB CORP.

WEBB CITY, MO.

were so highly unbalanced, customers had to shop around to fill their minimum needs. The freeze on shipments out of stock except on military account until Aug. 7 prevented a run on the warehouses immediately after the strike. An amendment to the freeze order permitted them to ship orders in process of execution.

Los Angeles-Fabricators feel the pinch of the freeze on warehouse nondefense steel. Auto plants here may delay scheduled opening of factories. Due to freight increases and the Capehart amendment, warehouse prices are up for the first time since January. Hot-rolled strip advanced 5 cents to \$6.60 per 100 pounds and hot-rolled sheets are up 5 cents to \$6.55. Prices on plates are up 20 cents, cold-rolled sheets 25 cents, and cold-rolled strip 10 cents. Cold-finished bars and structural shapes are down 5 cents.

Seattle—Warehouse steel demand has declined due to limited stocks. Buyers are postponing purchases until supply conditions improve.

Rails, Cars . . .

Track Material Prices, Page 139

Seattle—Pacific Car & Foundry Co., Renton, Wash., will build 500 insulated railroad cars for the Bangor Aroostock railroad, bringing 1450 cars the total backlog of the local plant. This means continued operation of the 500-man car production line for several months unless material shortages interrupt opera-

The Alaska railroad is analyzing tenders submitted to General Services for furnishing 200 new or used hopper cars. Low bids are: Bethle-hem Pacific Coast Steel Corp., new 50-ton hoppers, \$5350 per unit, delivery Johnstown, Pa., third quarter 1953; new 70-ton units, Greenville Steel Car Co., Greenville, Pa., \$6305 each, delivery Greenville, Sept. 1, 1953; Used cars, 70 ton, Marshall Railway Equipment Corp., Chicago, \$2200 each as in delivery Chicago, \$2200 each, as is, delivery Chicago; Chicago Freight Car & Parts Co., \$3835 per unit, rehabilitated and ready for service, delivery Chicago.

STRUCTURAL SHAPES . . .

STRUCTURAL STEEL PLACED

1047 tons, state bridge work, Albany county, New York, to Bethlehem Steel Co., Bethlehem, Pa.

power plant extension. Electric Co., Savannah, Ga., to Bristol Steel & Iron Works, Bristol, Va.; Stone & Webster Engineering Corp., Boston, engineer-contrac-

295 tons, laboratory and manufacturing building, Federal Radio, Nutley, N. J., to Grand Iron Works, New York city.

00 tons, warehouse, DuMont Laboratories, Clifton, N. J., to the Elizabeth Iron Works, Elizabeth, N. J.

125 tons, two-span steel stringer bridge, Fall
River, Mass., to American Bridge Division, S. Steel Co., Pittsburgh; Campanella & Cardi Construction Co., Hillsgrove, R. I., general contractor; Bethlehem Steel Co., Bethlehem, Pa., 70 tons reinforcing bars.

STRUCTURAL STEEL PENDING

3600 tons, Fore river bridge, Portland, Me.,

out for estimates shortly.

1500 tons, power plant, Ladd Air Field, Alaska; bids to U. S. Engineer, Alaska Division, Aug. 14.

1400 tons, Bonneville Power Administration,

administration building, Portland, Ore., Isaacson Iron Works, Seattle, low. L.0 tons, gymnasium, Northeastern Uni-versity, Boston; Volpe Construction Co., 12.0 tons,

Boston, general contractor, 1225 tons, Market St. extension to municipal subway, contract 268, Philadelphia; bids

982 tons, bridge work, Garden State parkway, section 4, contract 2, Union county, New Jersey, bids Aug. 21; also 256 tons of reinforcing steel.

200 tons, DuPont plant, Circleville, O., pending.

541 tons, bridge work, Garden State parkway, section 4, contract 1, Union county, New Jersey, bids Aug. 21; also 165 tons of reinforcing steel, 250 tons, alterations, Union railroad station,

Providence, R. I.

250 tons, school building, Reading, Mass.
Unstated, Washington state, Snohomish river
and Steamboat Slough highway bridges; bids soon to Olympia

Unstated, Idaho state 362-ft, highway bridge, Clearwater river, including 45 tons reinforcing; bids to Boise Aug. 19.
Unstated tonnage, hangar No. 6, International Airport, New York city, bids to be closed by the Port of New York Authority, Aug.

REINFORCING BARS . . .

REINFORCING BARS PLACED

450 tons, Eklutna tunnel and power house, Alaska, to Bethlehem Pacific Coast Steel Alaska. Corp., Seattle,

REINFORCING BARS PENDING

670 tons, substructures and pipe lines, New

Rochelle, N. Y., sewage treatment plant; bids Aug. 19, Westchester county.

256 tons, bridge work, Garden State parkway, section 4, contract 2, Union county, New Jersey, bids Aug. 21; also 98 tons of structural steel.

525 tons, mostly mesh, highway, Kingston-North Kingston, R.I.; S. & M. Construction Co., Providence, R. I., general contractor.

165 tons, bridge work, Garden State parkway, section 4, contract 1, Union county, New Jersey, bids Aug. 21; also 541 tons of structural steel.

25 tons, Hunt's Fall bridge, superstructure, Merrimack river, Lowell, Mass.; bids Aug. 22, Boston; also 1260 tons structural steel.

PLATES . . .

PLATES PLACED

300 tons, 8000 feet, 28 in., ¼ in., welded steel pipe, supply system expansion, Everett, Wash., to Consolidated Western Steel Corp., Seattle

PLATES PENDING

Unstated tonnage, 140,000-gallon standpipe, East Greenbush, N. Y.; bids in to Hampton Manor-Hillview Water District No. 4.

CAST IRON PIPE PENDING

2835 tons, 6 to 12-in., mechanical joint pipe, class 150; bids in to Washington Suburban Sanitary Commission, Hyattsville, Md.

STEEL PIPE PENDING

Unstated, 5400 feet submarine 36 and 20 in. feeder mains; bids to Richland, Wash., Aug.

Unstated, 15,800 ft, 12 to 2 in, water mains and accessories; bids to Port Angeles, Wash., Aug. 7.

RAILS, CARS . . .

RAILROAD CARS PLACED

Bangor & Aroostock railroad, 500 insulated cars, to Pacific Car & Foundry Co., Renton, Wash.

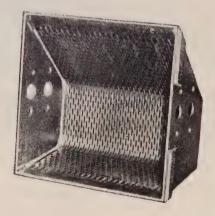
Great Northern 1000 steel box cars, to its

shops in St. Cloud, Minn. Western Fruit Express Co., 50 steel refrigerator cars, to its own shops.

RAILROAD CARS PENDING

Alaska railroad, 200 new or used, 50 and 70 ton hopper cars; bids in at Seattle,

Typical of Hendrick's Manufacturing **Facilities**



Hendrick is exceptionally well equipped to manufacture to specifications a wide range of metal products that involve such operations as perforating, shaping, forming, welding, brazing, riveting, etc. The perforated elevator bucket illustrated is typical of the many specialized articles for whose fabrication Hendrick has unusual facilities. Write us in detail regarding any metal product you desire fabricated.



HENDRICK

Perforated Metals Perforated Metal Screens Wedge-Slot Screens **Architectural Grilles** Mitco Open Steel Flooring, Shur-Site Treads, Armorgrids

Manufacturing Company 30 DUNDAFF STREET, CARBONDALE, PENNA.

Sales Offices In Principal Cities



totally enclosed 120-220 volt motor balanced to .001 of an inch total amplitude with presealed prelubricated bearings and positive adjustment to eliminate end play.

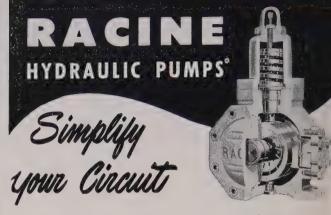
Wesche was chosen as a source because we are specialists in special motors. We design and build motors in any quantity to the customer's specification.

Write for catalog.

THE B. A. WESCHE ELECTRIC CO.

1621 Vine Street • Cincinnati 10, Ohio





Less valves and controls in a circuit provide easier installation and lower initial costs.

RACINE "Variable Volume" Pumps eliminate relief valves and extra piping. They reduce horsepower requirements and avoid excessive heat losses. Over-all cost of motor and reservoir is usually reduced. Efficiency is high because RACINE Pumps "put all of the oil to work."

A wide range of governor controls provide pumping action at the proper pressure and volume to handle any given job most effectively. These interchangeable governors are an exclusive RACINE feature.







rclay Street, New Haven, Conn

THE EASTERN MACHINE SCREW CORP., 22-42 Borclay Street, New Haven, Conn. Pacific Coast Representative: A. C. Berbringer, 334 N. San Pedro St., Loss Angeles, California. Canada: F. F. Barber Machinery Co., Toronto, Canada:



Here and There in Metalworking . . .

CONSTRUCTION-ENTERPRISE-ORGANIZATIONAL CHANGES

Hoster Steel Plans To Reopen

Work of putting Hoster Corp.'s integrated mill in Oklahoma City, Okla., back into operation started Aug. 3. United States District Judge W. R. Wallace approved an interim plan for reorganization of the company under the management of James B. Kite, trustee, and a committee of creditors. Total indebtedness of the firm is about \$650,000 including a \$500,000 mortgage on the physical properties. The plant includes early payment of federal taxes which total about \$25,000. In the new operation, the mill will turn out reinforcing steel which is comparatively simple to roll and in great demand. The plant has been closed since creditors asked for the reorganization of the firm several months ago.

Modine Initiates Production Line

Modine Mfg. Co., Racine, Wis., is starting its first large scale production of convector radiators in its Whittier, Calif., plant this month. Previously, the manufacture of convectors was concentrated east of the Mississippi.

Link-Belt To Enlarge Plant

Link-Belt Co., Chicago, plans to build an addition to its plant in Seattle, involving a crane way, steel trusses, corrugated steel sheathing.

AEC Awards Construction Contract

Negotiations have been completed between the Atomic Energy Commission and Kaiser Engineers, a division of Henry J. Kaiser Co., Oakland, Calif., for construction of a large part of the expansion program on the Hanford, Wash., plutonium producing project. Actual construction will begin late this fall.

Freeway Washer Appoints Agent

Freeway Washer & Stamping Co., Cleveland, appointed Industrial Products Sales Inc., Detroit, as its representative in eastern Michigan, District manager of the agency is H. Richard Ford.

Westinghouse Equips Defense Plant

Air-Arms Division, Westinghouse Electric Co., Pittsburgh, is equipping 453,000 sq ft at Friendship Airport, Baltimore. This plant, which the company plans to operate permanently, will produce for the Navy and Air Force automatic computors to direct gun and rocket fire, radar and auto-

pilots for fighter planes and guided missiles, also complete airborne armament systems for which it has a backlog of orders in excess of \$100 million.

Brickham Stamping To Build Plant

Brickham Stamping Co., Oshkosh, Wis., plans to build a plant costing about \$250,000. A six acre tract at the city's outskirts was acquired for the program.

Association Shortens Name

Air Pollution and Smoke Prevention Association of America Inc., Pittsburgh, changed its name to Air Pollution Control Association. Robert T. Griebling is executive secretary.

Dominion Bridge Buys Plant Site

Dominion Bridge Co., Lachine, Que., acquired a 30-acre site in North York, Ont., where it plans to erect a \$10 million plant. This is part of a five-year expansion plan and actual construction work will not be started for some time.

Automatic Sprinkler Expands

Automatic Sprinkler Corp. of America, Youngstown, is constructing a \$100,000 addition to its plant. This will add about 17,500 sq ft to its machine shop and assembly area.

Wire Rope Maker Moves Facilities

E. H. Edwards Co., manufacturer of wire rope, moved its San Francisco office to its plant in South San Francisco, Calif.

Martin To Move Machine Shop

Joseph J. Martin Co., 19-21 S. High St., Baltimore, maker of gears and couplings and engaged in other types of machine shop work, is building a new plant at 7800 Pulaski Highway. The building will contain 10,800 sq ft. The company expects to move to these new headquarters around Oct. 1. Joseph J. Martin and K. F. Martin are partners.

Limestone Carrier Completes Tests

The JOHN G. MUNSON, largest self-unloading limestone carrier ever built for Great Lakes shipping, will join the Bradley Transportation fleet later this summer, having successfully completed dock tests and trial run. The \$6.5 million carrier is built to haul 20,000 gross tons of stone at 16 miles an hour. Bradley Transportation Line is part of U. S. Steel's Michigan Limestone Division with headquarters in Detroit. The MUNSON, named in honor of the late John G.



MEYCO CARBIDE INSERTED DRILL JIG BUSHINGS

There are three simple reasons why MEYCO Carbide Inserted Bushings have won an enviable reputation for themselves:

- 1. Cemented tungsten carbide inserts at the points of wear increase the life of the bushings an unbelievably long time.
- 2. Hardened steel rings above and below the carbide inserts protect both drill and carbide from the shock of impact.
- 3. Body of hardened special alloy steel, combines the best features of steel bushings with the best features of carbide.

The story is simple: MEYCO bushings last as long as solid carbide bushings in most cases at costs that come close to the prices of ordinary steel bushings. And on top of that—they will increase the life of drills and fixtures, maintain accuracy much longer and solve extra tough production drilling problems. Made to A.S.A. Standards. For full information write for catalog No. 32.

Manufacturers of precision tools since 1888





Washers are "big business" with Whitehead. Production is fast, economical. Big runs from automatic presses. U. S. Air Corps Standard washers, U. S. and S.A.E. Standards, etc. WRITE FOR CATALOG



WHITEHEAD STAMPING

1667 W. Lafayette

Detroit 16, Mich.

THE BELMONT IRON WORKS



Engineers—Fabricators—Erectors—Contractors—Exporters Shops—Philadelphia—Eddystone—Royersford Main Office: Phila. 46, Pa.

New York Office-44 Whitehall St., N. Y. 4, N. Y.







A Blast Furnace Product made from only Virgin Ores

CO. - JACKSON, OHIO

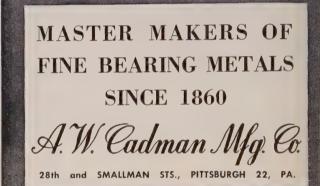




25 TO 50 TON CAPACIT

DIESEL . GASOLINE . ELECTRIC . STEAM

THE OHIO LOCOMOTIVE CRANE CO BUCYRUS, ONIO



PUNCHES . DIES . CHISELS . RIVET SETS

IF IT'S RIVETED YOU KNOW IT'S SAFE

WE FEATURE SPECIAL PUNCHES & DIES 660 E. 82nd ST., CLEVELAND, O

METALWORKING PLANTS PROSPECTS ARE YOUR

STEEL can put you in touch with the important ones, those that do more than 92% of the industry's business. Tell the buyers and specifiers in these plants of the machines or materials you have for sale through an "Equipment-Materials" advertisement. For rates write STEEL, Penton Building, Cleveland 13, Ohio.



Space Saver in Alcoa Building

by using a panel heating and cooling system that requires no radiators or conventional air conditioning units around the walls Aluuminum Co. of America saved valuable space in its 30-story Alcoa building in Pittsburgh. The system, installed by Dravo Corp., Pittsburgh, is hidden behind perforated aluminum ceiling panels like the one the workman above is clipping into place

Munson, former vice president of raw naterials of U. S. Steel, is the first addition to the Bradley fleet since 1927 and will become the seventh ressel in the fleet.

Buffalo Drydock To Be Rebuilt

American Shipbuilding Co., Cleveand, launched a \$500,000 modernizaion program at its drydock in Bufalo. The No. 2 drydock will be completely rebuilt to accommodate larger ressels. The project is scheduled to be finished some time next year.

Naugatuck Chemical Expands Plant

Port Neches, Tex., synthetic rubber plant operated by Naugatuck Chemcal Division, United States Rubber Co., New York, is being converted rom "hot" to "cold" synthetic rubber and its production capacity increased rom 70,000 long tons to more than 00,000 long tons annually. The contersion and expansion program is cheduled to be completed by late all and will cost about \$2.5 million.

Inion Hardware Buys Product Line

Union Hardware Co., Torrington, conn., purchased the assets of Horton Bristol Mfg. Co., a division of Wright Machine Co. Inc., Worcester, Mass. The transaction does not include real state and the finishing line business when when the division. Union plans of manufacture and sell complete the golf clubs and fishing tacle unter the names Horton and Bristol.

Cleaver-Brooks Acquires Plant

Cleaver - Brooks Co., Milwaukee, purchased a building immediately west of its north side plant into which it is transferring some of its light manufacturing operations. The company manufactures steam boilers, tank car heaters, bituminous boosters, steam generators, etc.

Laundry Machine Firm Changes Name

New York-Penn Laundry Machine Corp., Buffalo, changed its name to Wiegand Laundry Machinery Inc. Paul T. Wiegand continues as president.

Los Angeles Toolmaker Moves

Mechanical Specialties Co. moved to 5700 W. 96th St., Los Angeles. The Company manufactures specially designed tools, jigs, fixtures, dies and machinery.

Kaiser Enlarges Sales Organization

Kaiser Aluminum & Chemical Sales Inc., Oakland, Calif., expanded its service to aluminum fabricators through establishment of nine additional sales offices and appointment of five distributors. Sales offices were opened in Grand Rapids, Mich.; Tulsa, Okla.; Miami, Fla.; Evansville, Ind.; Columbus, O.; Birmingham; New Orleans; Pittsburgh; Baltimore. The following were named distributors: Earle M. Jorgensen Co., Houston and Dallas; Industrial Metals, St. Louis; Follansbee Metal

Warehouses, Pittsburgh; Merrill Aluminum Corp., a subsidiary of Merrill & Usher Co., Worcester, Mass.

Allen-Bradley Appoints Agents

Allen - Bradley Co., Milwaukee, manufacturer of electric motor controls, appointed Robert P. Smith & Co., Jacksonviile, Fla., as its agent. This distributor has a branch office in Miami, Fla., under the management of C. M. Converse.

Cooperage Firm Enlarges Warehouse

American Cooperage & Steel Drum Co., with plants at 141 N. Kresson St. and 4207 E. Fairmount Ave., Balti-



WASHERS

- -special sizes
- -special shapes
- ---flat
- -concentric
- -standard sizes

We fabricate from:

lead
lead alloys
clad bi-metals
brass
bronze
copper
aluminum
block tin

fusible metals solder brazing alloys bearing bronze clock brass fibers plastics special materials

Send your specification charts.

Deliveries are prompt; prices right.



9108 ROSELAWN AVENUE DETROIT 4, MICHIGAN



Since 1905. Engineers and manufacturers of Conveyers and Conveyer Systems for the Metal-working Industries.

Three modern plants. Engineering Offices in All Principle Cities. There's an Engineering Sales Office near you.



MATHEWS CONVEYER CO.
ELLWOOD CITY - PENNSYLVANIA
SAN CARLOS - CALIFORNIA
PORT HOPE - ONTARIO, CANADA

more, conditioner of steel drums, barrels, kits, etc., is building a 5800 sq ft warehouse addition on Fairmount Avenue.

Alamo Builds Coal Charging Car

Alamo Iron Works, San Antonio, Tex., completed a 130,000-pound coal charging car. The machine will be used by a large coke producing plant in northern Mexico to mechanically charge prepared coal into a battery of coke ovens. It will be installed at Cia Carbonifera de Sabinas, S. A., a property of American Smelting & Refining Co. in Rosita, Coahuila, Mexico.

Chrysler Moves Engine Division

Chrysler Corp., Detroit, moved its facilities for manufacture and testing of marine and industrial engines from its Jefferson avenue plant in that city to its new engine plant at Trenton, Mich. All administrative and production employees and operations of the Marine and Industrial Engine Division were transferred to the Trenton site.

Youngstown Plant To Open in October

Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown, will place its \$2.5 million Dollison plant in operation in early October. The plant has 80,000 sq ft of floor space and will produce wire reinforced flexible hose for handling liquids and gases. Entire output initially will be channeled to the jet aircraft program.

Matteson Forms Engineering Firm

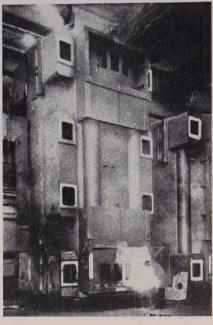
E. A. Matteson, formerly export manager, Aetna-Standard Engineering Co., Youngstown, organized Matteson Engineering Service, that city. The company will provide consulting, engineering and designing services to the flat-rolled steel and nonferrous industries and will specialize in strip and sheet finishing, processing, galvanizing and tinning.

Precision Metalsmiths Names Agents

Precision Metalsmiths Inc., Cleveland, producer of investment castings, is expanding its sales organization by the appointment of the following as its representatives: R. L. Tate of C. B. Lawrence Co., Pittsburgh; Bader Tool & Engineering Co., Minneapolis; David T. Applebee, Grand Rapids, Mich.

Thompson Wire To Build Plant

A new industry for Baltimore, Thompson Wire Co., will begin construction immediately on the 25 acres of land it purchased at Sparrows Point, Md. The Baltimore Association of Commerce rates this plant as one of the largest that has come into the



3000 Feet of Welds

More than 3000 feet of welds were required on this 168,200-pound generator stator at the Schenectady works of General Electric Corp. It was turned in three positions to get at the work. A chipper is shown cleaning off a weld on top while a welder, using a GE 500-ampere ac welder, gives the giant stator its finishing touches

Baltimore area since the new industry location program of the Industrial Bureau was inaugurated three years ago. Thompson Wire Co., Boston, is one of the leading independent firms in the field of strip steel and fine specialty wires.

Victor Equipment Moves Plant

Victor Equipment Co., San Francisco, moved its Fresno, Calif., plant to 145 Van Ness Ave.

Canadian GE Plans To Expand

Canadian General Electric Co. plans to construct a plant at Guelph, Ont. The company has taken an option on land at the city's outskirts. Plans call for completion of the project about the end of 1953.

Syntron Forms Canadian Subsidiary

Syntron Co., Homer City, Pa., manufacturer of material handling equipment, portable power tools, diesel pile hammers, selenium rectifiers, shaft seals, etc., organized a Canadian subsidiary, Syntron Ltd. which will operate a manufacturing plant in Stoney Creek, Ont. Selenium rectifiers will be the first item to go into production, although ultimately the entire Syntron line will be manufactured in the Stoney Creek plant. Production is scheduled to start sometime in September or October.

De Havilland Builds Canadian Plant

De Havilland Aircraft of Canada Ltd., Toronto, Ont., is constructing a \$4 million plant in North York Ont. The plant will service airliner, and will produce aircraft. The present De Havilland plant was sold to the Canadian government for use at a RCAF base.

Bede Appoints Distributors

Bede Industrial Products Inc. Cleveland, which handles national sales and distribution of Bede paint heaters for hot spray painting, appointed the following jobbers and distributors: Payton Co., Chicago; Mid-States Industrial Coru., Rockford Ill.; Finishing Equipment & Compressor Co., Kansas City, Mo.; William D. Burke, Riverside, Calif.



OPEN TIME 300 TON PRESS BRAKE

Will bend 20' x 1/4" to 6' x 34" PI.

ST. JOSEPH STRUCTURAL STEEL CO.

Box 68 Sta. "A" St. Joseph, Mo.



NEW and REBUILT
MOTORS
GENERATORS
TRANSFORMERS
1 to 1500 H. P.
ELECTRIC EQUIPMENT CO.
ROCHESTER 1, NEW YORK

FOR SALE

TUBING 3/4" O. D. square hot rolled, 16 5 gauge, approximately 100,000 lineal feets
Subject to prior sale. Contact

THE MENGEL COMPANY

Purchasing Dept., Louisville 1, Kentucks

OIL FILTERS, Sperry 18" x 18", plate & frame, closed del., 11 chambers, ½".

RIEHLE TESTING MACHINE, 80,000 #

Tensile & Compression.

LOW PRICES IMMEDIATE DELIVERY

CONSOLIDATED PRODUCTS CO., INC. 15-21 Park Row New York 38, N. Y

FOR SALE

—8" x 12" United 2-High Cold Mills with Combination Pinion Stands and Gear Sets D. C. Motor Drives; Coilers.

FRANK B. FOSTER, INC.
2220 Oliver Building Pittsburgh 22, Pd
Cable Address "Foster Pittsburgh"

BORING MILLS, 48" and 72" Gisholt.
BULLDOZERS, No. 25 and 27, W. & W.
HAMMER, NAZEL, 5-N, 6" x 6", M.D.
KEYSEATERS, Nos. 1, 2 and 5, BAKER.
LATHE, 42" x 30" PUTNAM, M.D.
PRESS, TRIMMING, No. 6 W & W, 225 ton.
SHEAR, 140" x 36" E. W. BLISS.

WEST PENN MACHINERY COMPANY

1210 House Bldg.

Pittsburgth 22, P

RAILROAD EQUIPMENT-FOR SALE

AS IS

RECONDITIONED

STANDARD GAUGE FREIGHT CARS

Box, Double Sheathed, 40-Ton Capacity Box, Single Sheathed, 50-Ton Flats, 40-and 50-Ton, Steel Underframe, 40'0" Gondolas, Composite, 40-Ton Capacity Gondolas, Composite or All Steel, 50-Ton and 70-Ton

Cabooses, Eight Wheel, Cupola Type Hoppers, Covered, All-Steel, 70-Ton Hoppers, Twin, All-Steel, 50-Ton, Cross Dump Hoppers, All-Steel, 70-Ton, Cross Dump Tank, 3,000-Gallon, High Pressure

EXTRA LONG FLAT CARS

40 & 50-Ton Capacity, Length 70' and 74'

STANDARD GAUGE AIR DUMP CARS

Side Dump, 16-Yd., 30-Ton Lift Door End Dump, 20-Yd., 50-Ton Drop Door End Dump, 10-Yd., 30-Ton Lift Door

STANDARD GAUGE DIESEL-ELECTRIC ROAD SWITCHING LOCOMOTIVE

1500 H.P., 120-Ton, Type 0-4-4-0

Send us your inquiries

WE BUY FREIGHT CARS FOR DISMANTLING IRON & STEEL PRODUCTS, INC. Send us your offerings

REPAIR PARTS For All Types of Freight Cars

General Office 13462 S. Brainard Ave. Chicago 33, Illinois Phone: BAyport 1-3456

New York Office 50-D. Church Street New York 7, N. Y. Phone: BEekman 3-8230 "ANYTHING containing IRON or STEEL"

STORAGE TANKS 6,000 Gallon 8.000 Gallon 10,000 Gallon

CLASSIFIED

Employment Service

SALARIED POSITIONS \$3,500 TO \$35,000. WE offer the original personal employment service (established 42 years). Procedure of highest athical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC., 110 Dun Bldg., Buffalo 2, N. Y.

Accounts Wanted

SALES REPRESENTATIVE
Man with many years of sales experience serving methaworking field has decided to operate as a Manufacturers' Agent covering Northern Ohio for one or two well-established lines. Interested in lines sold to metalworking including castings, forgings, gears, fasteners and sintered powdered metal parts. Address Box 532, STEEL, Penton Bldg., Cleveland 13, Ohio. SALES REPRESENTATIVE

FOR CLASSIFIED RATES

And Further information write STEEL, Penton Bldg., Cleveland 13, O.

WANTED STAINLESS TUBE SALESMAN

Experience essential - opportunity for ad-

Write Box 548 STEEL

Penton Bldg.,

Cleveland 13, Ohio

EMPLOYMENT SERVICE

CONFIDENTIAL COUNSELLING
ON ALL
PERSONNEL PROBLEMS
TO EMPLOYER and EMPLOYEE
EXECUTIVE—(All Branches)
ENGINEERING—(All Phases)
ADMINISTRATIVE—ACCOUNTING
SALES—ADVERTISING
In Salary Brackets
\$5,200-\$50,000
NATIONAL COVERAGE NATIONAL COVERAGE

Please write briefly, outlining your specific experience or personnel needs.

Wm. H. Bruce, Mgr.
EMPLOYMENT COUNSEL
Suite 500, 7 W. Madison St. Chicago 2, III.
Financial 6-2100

WANTED: MANUFACTURERS DISTRIBUTORSHIP

For coverage in southern half of Ohio and adjacent marketing area by well rated Cincinnati firm who has been selling to industry for past 18 years.

Write Box 552.

STEEL, Penton Bldg., Cleveland 13, Ohio

WANTED!

To manufacture and subassemble any unit weighing $1,000 \neq 0$ r under. We have ample facilities for all types of machining and assembly of parts, Ample facilities for castings of bronze aluminum, steel and gray iron for above parts. Send us your inquiries and blueprints for quotation.

THE WEBB CORPORATION
Webb City, Missouri

We are seeking Cold Finished Steel Rounds C-1040 or C-1137 grade, in $6\,V_2\,''$, 7'', 8'', 9'' and 10'' diameters for manufacture of our product. If you can furnish a single full-length bar or more, contact us. Also seeking Mill Source for same.

SAN ANGELO FOUNDRY & MACHINE CO. San Angelo, Texas P. O. Box 1587

IMPORTED STEEL-OPEN HEARTH TO YOUR SPECIFICATIONS GOOD DELIVERIES-REASONABLE PRICES

FORGING BARS . ROUNDS **SQUARES**

WIRE RODS REROLLING STRIP COILS

STRUCTURALS SHEETS **PLATES**

INGOTS SHEETBAR BILLETS

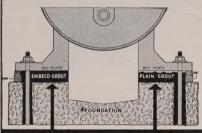


Woolworth Building . 50th Floor . 233 Broadway, New York 7, N. Y. Cable FABKANT BEekman 3-3041

Regrouting? Use EMBECO

Non-Shrink Method

Embeco (1) produces flowable, nonshrink, ductile grout which...(2) gives full, level, lasting bedplate contact...(3) helps avoid costly shutdowns. (See illustration below.) Write for Embeco booklet...gives grouting method based on 35 years' experience.



Is Non-Shrink

Plain Grout

Concrete FLOORS Worn Out?

Resurface With "Iron-Clad" MASTERPLATE

Masterplate floated into fresh concrete produces iron-armored floor with 4-6 times greater wear-resistance than best plain concrete floor; also spark resistant, static-disseminating and nonslip. Non-colored and 11 colors. For new floors and resurfacing. Write for Masterplate booklet.

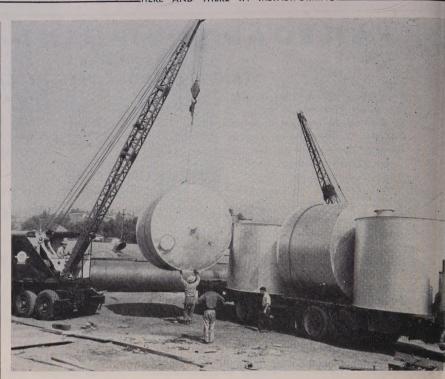


For full information on Embeco and Masterplate, write —

The MASTER BUILDERS Co.

Subsidiary of American Marietta Company

Cleveland 3, Ohio • Toronto, Ontario



Bound for Disaster Area

When the earthquake hit California in July, the steel water tanks used on the livestock ranches of Kern county were destroyed. The Kern County Land Co. and dered ten 5500-gallon capacity tanks from the Alhambra, Calif., plant of the American Pipe & Steel Corp. Five days later the tanks were completed. The were hauled to the stricken area and installed one week after the quake hauled.

LeRoi To Manufacture Mining Machine

Rights to manufacture and market the continuous mining machine developed under the mining development program of Bituminous Coal Research Inc., Pittsburgh, were sold to Le Roi Co., Milwaukee.

Murray Reorganizes Division

Murray Corp. of America, Detroit, is reorganizing its Home Appliance Division at its South Scranton, Pa., plant and is shifting its sales personnel. Manufacturing and product development and expansion of operating facilities will continue to be directed in that city by T. W. Hardy, vice president and general manager, Home Appliance Division. Sales and advertising activities will be handled from the Detroit office of the company. Direction of the entire sales and advertising operation will be assumed by C. H. Menge, vice president.

Tool Design & Engineering To Move

Tool Design & Engineering Co. will move into a new plant at 705 Isis St., Inglewood, Calif., in October. The firm produces cutter heads, assembly equipment, aircraft parts and special machines.

Welding Rod Maker Builds Addition

Arcrods Corp., Sparrows Point, Md., manufacturer of welding electrodes, is building a warehouse addition containing 9100 sq ft. The company owned jointly by General Electric Conscience Schenectady, N. Y., and Air Redultion Co., Inc., New York, with general offices at 60 East 42nd St., New York.

Fabricator To Expand Facilities

California Cornice, Steel & Supp Corp., metal and aircraft fabricated will expand its facilities at 1600 Spring St., Los Angeles.

Ampco Metal Names Distributor

Ampco Metal Inc., Milwaukee, a pointed H. J. Shockey & Associate Dayton, O., as a distributor of welding products in that area.

Skilsaw To Build Service Branch

Skilsaw Inc., Chicago, maker industrial power tools, will erect sales and service branch at 576 Delavan Ave., Buffalo. Construction is scheduled to be completed late to year.

Pacific Wire Forms Los Angeles Unit

Pacific Wire Works Co., Seatily established Kaye Pacific Wire Products Co. with an office and ward house in Los Angeles. The new vision acquired the stock of inspection of the Woven Will Fabric Division, John A. Roeblings Sons Co., Trenton, N. J.